

**Safety Attribute Inspection (SAI) Data Collection Tool**  
**3.1.9 Aircraft Performance Operating Limitations (OP)**

**ELEMENT SUMMARY INFORMATION**

**Purpose of This Element** (Certificate Holder's responsibility):

- To ensure that the Certificate Holder's aircraft are operated within the performance limitations of the Aircraft Flight Manual and regulations.

**Objective** (FAA oversight responsibility):

- To determine if the Certificate Holder's Aircraft Performance Operating Limitations process meets all applicable requirements of the Federal Aviation Regulations and FAA policies.
- To determine if the Certificate Holder's Aircraft Performance Operating Limitations process incorporates the System Safety Attributes.
- To identify any shortfalls in the Certificate Holder's Aircraft Performance Operating Limitations process.

**Specific Instructions:**

- Intentionally Left Blank

**SUPPLEMENTAL INFORMATION**

**Specific Regulatory Requirement(s) (SRRs):**

- SRRs:
  - 121.135(a)(1)
  - 121.135(b)(1)
  - 121.135(b)(2)
  - 121.135(b)(3)
  - 121.173(a)
  - 121.173(b)
  - 121.173(c)
  - 121.173(d)
  - 121.173(e)
  - 121.173(f)
  - 121.173(g)
  - 121.175(a)
  - 121.175(b)
  - 121.175(c)
  - 121.175(d)

121.175(e)  
121.177(a)(1)  
121.177(a)(2)  
121.177(a)(3)  
121.177(b)  
121.179(a)  
121.181(a)  
121.181(b)  
121.181(c)(1)  
121.181(c)(2)  
121.181(c)(3)  
121.181(c)(4)  
121.181(c)(5)  
121.181(c)(6)  
121.183(a)(1)  
121.183(a)(2)  
121.185(a)  
121.185(b)  
121.187(a)  
121.189(a)  
121.189(b)  
121.189(c)(1)  
121.189(c)(2)  
121.189(c)(3)  
121.189(d)(1)  
121.189(d)(2)  
121.189(e)  
121.189(g)  
121.191(a)(1)  
121.191(a)(2)  
121.193(a)(1)  
121.193(a)(2)  
121.193(b)(1)  
121.193(b)(2)  
121.193(c)(1)  
121.193(c)(2)  
121.195(a)  
121.195(b)  
121.195(c)  
121.195(d)  
121.195(e)  
121.197  
121.198(a)  
121.198(a)(1)  
121.198(a)(2)  
121.198(b)(1)  
121.198(b)(2)  
121.198(b)(3)  
121.198(b)(4)  
121.198(c)

121.198(d)  
121.198(e)  
121.198(f)  
121.198(g)  
121.199(a)  
121.201(a)  
121.201(b)  
121.203(a)(1)  
121.203(a)(2)  
121.205  
91.323(a)(1)  
91.323(b)(4)  
91.9(b)(1)  
91.9(b)(2)

**Related CFR(s) & FAA Policy/Guidance:**

- Related CFRs:
  - 121.135(a)(2)
  - 121.135(a)(3)
  - 121.135(a)(4)
  - 121.135(b)(13)
  - 121.135(b)(9)
  - 91.323(a)(1)
  - 91.323(b)(4)
  - 91.605(a)(1)
  - 91.605(a)(2)
  - 91.605(a)(3)
  - 91.605(a)(4)
  - 91.605(b)(1)
  - 91.605(b)(2)
  - 91.605(b)(3)
  - 91.605(b)(4)(i)
  - 91.605(b)(4)(ii)
  - 91.605(c)(1)
  - 91.605(c)(2)
  - 91.605(c)(3)
  - 91.9(a)
  - 91.9(b)(1)
  - 91.9(b)(2)
- FAA Policy/Guidance:
  - FAA Order 8400.10, Volume 4, Chapter 3
  - FSAT 95–16A, 95–17
  - HBAT 98–31A
  - AC 91–6A

**SAI SECTION 1 – PROCEDURES ATTRIBUTE**

**Objective:** Procedures, instructions and information contained in Certificate Holder's manual are documented methods for accomplishing a process. Policies contained in the Certificate Holder's manual should establish the Certificate Holder's compliance posture. Policies may not be stand-alone statements but may be imbedded within procedures, instructions or information regarding a particular regulatory requirement. The questions in this section of the data collection tool are designed to assist the inspector in determining if the Certificate Holder's manual has documented or prescribed methods of accomplishing the process requirements that provide answers to the associated who, what, when, where and how type questions. This section of the data collection tool contains policy questions, procedural questions and instructional or informational questions pertaining to various types of Certificate Holder requirements such as actions, prohibitions or resources (i.e., personnel, facilities, equipment, technical data, etc.).

**Tasks**

To meet this objective, the inspector must accomplish the following tasks:

1. Review the information listed in the Supplemental Information section of this data collection tool.
2. Review the duties and responsibilities for management and other personnel identified by the Certificate Holder who accomplish the Aircraft Performance Operating Limitations process.
3. Review the Certificate Holder's manual to ensure that it contains policies, procedures, instructions and information necessary for the Aircraft Performance Operating Limitations process.

**Questions**

To meet this objective, the inspector must answer the following questions:

1. Does the Certificate Holder's manual content meet the specific regulatory and FAA policy requirements for an Aircraft Performance Operating Limitations process:

- 1.1 Does the Certificate Holder's manual contain general policies for the Aircraft Performance Operating Limitations process that comply with the specific regulatory requirements?  
SRRs: 121.135(b)(1); 121.173(b); 121.173(b); 121.173(c); 121.173(c); 91.9(b)(1); 91.9(b)(2); 91.323(a)(1); 91.323(b)(4)

☐ Yes

☐ No, Explain

*Related Design JTI's:*

1. Check that the Certificate Holder's manual system contains a policy that no person will operate a U.S.-registered civil aircraft for which an Airplane Flight Manual is required by <sup>a</sup>1.5 of this chapter unless there is available in the aircraft a current, approved Airplane Flight Manual or the manual provided for in ©21.141(b) and, when a Flight Manual is not required by 21.5 of this chapter, a current approved Airplane Flight Manual, approved manual material, markings, and placards, or any combination thereof.  
*Sources:* 121.135(b)(1); 91.9(b)(1); 91.9(b)(2)  
*Interfaces:* 2.1.1-op; 7.1.3-op; 3.2.1-op; 1.1.1-aw; 3.2.3-op; 7.1.3-aw; 3.2.2-op; 4.2.5-op; 2.1.1-aw; 4.2.3-op; 3.1.3-op
2. Check that the Certificate Holder's manual system contains a policy specifying that no person may operate a U.S.-registered civil aircraft for which an Airplane Flight Manual is not required by <sup>a</sup>1.5 of this chapter, unless there is available in the aircraft a current approved Airplane Flight Manual, approved manual material, markings, and placards, or any combination thereof.

<p><i>Sources:</i> 121.135(a)(1); 91.323(a)(1); 91.323(b)(4)  <i>Interfaces:</i> 1.2.2-aw; 1.2.3-aw; 1.3.9-aw; 1.3.2-aw; 3.2.2-op; 4.2.5-op; 1.1.1-aw; 4.2.3-op; 1.3.1-aw</p> <p>3. Check that the Certificate Holder's manual contains a policy that except for large nontransport category airplane certificated before January 1, 1965, when operating a turbine-engine-powered airplane it shall comply with applicable provisions of FAR 121.189 through 121.197. Except, when operating a turbo-propeller-powered airplane certificated after August 29, 1959, but previously type certificated with the same number of reciprocating engines, the Certificate Holder may comply with 121.175 through 121.187; or until December 20, 2010, a turbo-propeller-powered airplane described in 121.157(f), the Certificate Holder may comply with the applicable performance requirements of appendix K of this part.  <i>Sources:</i> 121.173(b); 121.173(b)(2); 121.173(b)(1); 121.173(c); 121.135(b)(1)  <i>Interfaces:</i> 2.1.1-op; 2.1.2-op; 2.1.5-aw; 2.1.4-aw; 2.1.3-aw; 1.1.1-aw; 2.1.4-op; 2.1.1-aw; 2.1.5-op; 2.1.2-aw; 2.1.3-op</p> <p>4. Check that the Certificate Holder's manual contains a policy that when operating a large nontransport category airplane certificated before January 1, 1965, it shall comply with FAR 121.199 through 121.205 and any determination of compliance will be based only on approved performance data.  <i>Sources:</i> 121.173(c); 121.135(b)(1)  <i>Interfaces:</i> 2.1.4-op; 2.1.3-op; 2.1.5-op; 1.1.1-aw; 2.1.1-aw; 2.1.2-aw; 2.1.4-aw; 2.1.3-aw; 2.1.5-aw; 2.1.1-op; 2.1.2-op</p>	
<p>1.2 Does the Certificate Holder's manual cite the regulatory requirements listed in the Supplemental Information section of this SAI?  SRRs: 121.135(b)(3)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.3 Does the Certificate Holder's manual contain the duties and responsibilities for personnel who will accomplish the Aircraft Performance Operating Limitations process?  SRRs: 121.135(b)(2)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.4 Does the Certificate Holder's manual include instructions and information for personnel to meet the requirements of the Aircraft Performance Operating Limitations process?  SRRs: 121.135(a)(1)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.5 Does the Certificate Holder's manual comply with the applicable airplane certification standards?  SRRs: 121.173(a); 121.173(b); 121.173(c)</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system contains instructions and information to its personnel specifying that if the Certificate Holder elects to carry the manual required by FAR 121.133, the Certificate Holder may revise the operating procedures sections and modify the presentation of performance data from the applicable flight manual if the revised operating procedures and modified performance data presentation are— (1) Approved by the Administrator; and (2) Clearly identified as airplane flight manual</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

<p>requirements.  <i>Sources:</i> 121.173(a); 121.173(c); 121.135(b)(1)  <i>Interfaces:</i> 2.1.4-aw; 2.1.3-aw; 2.1.5-aw; 2.1.2-op; 2.1.4-op; 1.1.1-aw; 2.1.5-op; 2.1.1-op; 2.1.3-op; 2.1.2-aw; 2.1.1-aw</p> <p>2. Check that the Certificate Holder's manual contains instructions and information to its personnel that when operating a large nontransport category airplane certificated before January 1, 1965, it shall comply with FAR 121.199 through 121.205 and any determination of compliance will be based only on approved performance data.  <i>Sources:</i> 121.173(c); 121.135(a)(1)  <i>Interfaces:</i> 2.1.2-aw; 2.1.1-aw; 2.1.5-op; 2.1.3-op; 2.1.2-op; 2.1.1-op; 2.1.4-op; 2.1.3-aw; 2.1.5-aw; 1.1.1-aw; 2.1.4-aw</p>	
<p>1.6 Does the Certificate Holder's manual contain procedures for determining take off weight and performance?  SRRs: 121.173(e); 121.175(a); 121.175(b); 121.175(c); 121.175(d); 121.175(e); 121.177(a)(1); 121.177(a)(2); 121.177(a)(3); 121.177(b); 121.179(a); 121.181(a); 121.181(b); 121.181(c)(1); 121.181(c)(2); 121.185(a); 121.189(a); 121.189(b); 121.189(c)(1); 121.189(c)(2); 121.189(c)(3); 121.189(d)(1); 121.189(d)(2); 121.189(e); 121.191(a)(1); 121.191(a)(2); 121.199(a); 121.201(a); 121.173(f); 121.173(g); 121.185(b); 121.189(g)</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at takeoff.  <i>Sources:</i> 121.189(a); 121.135(b)(13)  <i>Interfaces:</i> 2.1.2-aw; 4.2.11-op; 2.1.2-op; 4.2.5-op; 1.1.1-aw; 4.2.3-op; 3.2.1-op</p> <p>2. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at takeoff.  <i>Sources:</i> 121.189(a); 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 4.2.11-op; 3.2.1-op; 2.1.2-op; 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op</p> <p>3. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane certificated after August 26, 1957, but before August 30, 1959 (SR422, 422A), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the minimum distances required for takeoff. In the case of an airplane certificated after September 30, 1958 (SR422A, 422B), the takeoff distance may include a clearway distance but the clearway distance included may not be greater than 1/2 of the takeoff run.  <i>Sources:</i> 121.189(b); 121.135(b)(13)  <i>Interfaces:</i> 4.2.3-op; 4.2.5-op; 1.1.1-aw; 3.2.1-op; 2.1.2-aw;</p>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>

- 2.1.2-op; 4.2.11-op
4. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane certificated after August 26, 1957, but before August 30, 1959 (SR422, 422A), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the minimum distances required for takeoff. In the case of an airplane certificated after September 30, 1958 (SR422A, 422B), the takeoff distance may include a clearway distance but the clearway distance included may not be greater than 1/2 of the takeoff run.  
*Sources:* 121.189(b); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op; 3.2.1-op; 4.2.11-op; 2.1.2-op
  5. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The accelerate-stop distance must not exceed the length of the runway plus the length of any stopway.  
*Sources:* 121.189(c)(1); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 3.2.1-op; 2.1.2-op; 4.2.3-op; 4.2.5-op; 2.1.2-aw; 1.1.1-aw
  6. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The accelerate-stop distance must not exceed the length of the runway plus the length of any stopway.  
*Sources:* 121.189(c)(1); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 4.2.5-op; 4.2.11-op
  7. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The takeoff distance must not exceed the length of the runway plus the length of any clearway except that the length of any clearway included must not be greater than one-half the length of the runway.  
*Sources:* 121.189(c)(2); 121.135(b)(13)  
*Interfaces:* 4.2.5-op; 3.2.1-op; 4.2.3-op; 1.1.1-aw; 2.1.2-aw; 2.1.2-op; 4.2.11-op
  8. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane certificated after

August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The takeoff distance must not exceed the length of the runway plus the length of any clearway except that the length of any clearway included must not be greater than one-half the length of the runway.

*Sources:* 121.189(c)(2); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 2.1.2-aw; 4.2.11-op; 4.2.5-op; 2.1.2-op; 4.2.3-op; 3.2.1-op; 1.1.1-aw

9. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The takeoff run must not be greater than the length of the runway.  
*Sources:* 121.189(c)(3); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 1.1.1-aw; 3.2.1-op; 4.2.5-op; 4.2.3-op; 2.1.2-aw
10. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown: The takeoff run must not be greater than the length of the runway.  
*Sources:* 121.189(c)(3); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op
11. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual. In the case of an airplane certificated after August 26, 1957, but before October 1, 1958 (SR422), that allows a takeoff path that clears all obstacles either by at least  $(35+0.01D)$  feet vertically ( $D$  is the distance along the intended flight path from the end of the runway in feet), or by at least 200 feet horizontally within the airport boundaries and by at least 300 feet horizontally after passing the boundaries.  
*Sources:* 121.189(d)(1); 121.135(b)(13)  
*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op; 2.1.2-op; 4.2.11-op; 3.2.1-op
12. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual. In the case of an airplane certificated after September 30, 1958 (SR 422A, 422B), that allows a net takeoff flight path that clears all obstacles either by a height of at least 35 feet vertically, or by at least 200 feet horizontally within the airport boundaries and by at least 300 feet horizontally after



passing the boundaries.

*Sources:* 121.189(d)(2); 121.135(b)(13)

*Interfaces:* 3.2.1–op; 4.2.11–op; 4.2.3–op; 2.1.2–op; 2.1.2–aw; 1.1.1–aw; 4.2.5–op

13. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual. In the case of an airplane certificated after August 26, 1957, but before October 1, 1958 (SR422), that allows a takeoff path that clears all obstacles either by at least  $(35+0.01D)$  feet vertically (D is the distance along the intended flight path from the end of the runway in feet), or by at least 200 feet horizontally within the airport boundaries and by at least 300 feet horizontally after passing the boundaries.

*Sources:* 121.135(a)(1); 121.135(b)(9); 121.189(d)(1)

*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.3–op; 4.2.5–op

14. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual. In the case of an airplane certificated after September 30, 1958 (SR 422A, 422B), that allows a net takeoff flight path that clears all obstacles either by a height of at least 35 feet vertically, or by at least 200 feet horizontally within the airport boundaries and by at least 300 feet horizontally after passing the boundaries.

*Sources:* 121.189(d)(2); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.5–op; 3.2.1–op; 4.2.3–op; 1.1.1–aw; 2.1.2–aw; 2.1.2–op; 4.2.11–op

15. Check that the Certificate Holder's manual system includes procedures to ensure that in determining maximum weights, minimum distances, and flight paths under FAR 121.189(a) through (d), correction must be made for the runway to be used, the elevation of the airport, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if operating limitations exist for the minimum distances required for takeoff from wet runways, the runway surface condition (dry or wet).

*Sources:* 121.189(e); 121.135(b)(13)

*Interfaces:* 2.1.2–aw; 4.2.3–op; 4.2.5–op; 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw

16. Check that the Certificate Holder's manual system includes procedures to ensure that in determining maximum weights, minimum distances, and flight paths under FAR 121.189(a) through (d), wet runway distances associated with grooved or porous friction course runways, if provided in the Airplane Flight Manual, may be used only for runways that are grooved or treated with a porous friction course (PFC) overlay, and that the operator determines are designed, constructed, and maintained in a manner acceptable to the Administrator.

- Sources:* 121.189(e); 121.135(b)(13)  
*Interfaces:* 2.1.2–op; 4.2.3–op; 4.2.5–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.11–op
17. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that in determining maximum weights, minimum distances, and flight paths under FAR 121.189(a) through (d), correction must be made for the runway to be used, the elevation of the airport, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if operating limitations exist for the minimum distances required for takeoff from wet runways, the runway surface condition (dry or wet).  
*Sources:* 121.189(e); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 1.1.1–aw; 2.1.2–aw; 4.2.3–op; 4.2.5–op; 4.2.11–op; 3.2.1–op; 2.1.2–op
18. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that in determining maximum weights, minimum distances, and flight paths under FAR 121.189(a) through (d), wet runway distances associated with grooved or porous friction course runways, if provided in the Airplane Flight Manual, may be used only for runways that are grooved or treated with a porous friction course (PFC) overlay, and that the operator determines are designed, constructed, and maintained in a manner acceptable to the Administrator.  
*Sources:* 121.189(e); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 4.2.5–op; 1.1.1–aw; 2.1.2–aw; 4.2.3–op
19. Check that the Certificate Holder's manual system has instructions and information to its personnel that for the purposes of FAR 121.189, the terms, "takeoff distance," "takeoff run," "net takeoff flight path" and "takeoff path" have the same meanings as set forth in the rules under which the airplane was certificated.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 121.189(g)  
*Interfaces:* 4.2.5–op; 3.2.1–op; 1.1.1–aw; 4.2.3–op; 4.2.11–op; 2.1.2–aw; 2.1.2–op
20. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a non transport category airplane may take off that airplane at a weight greater than the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway, from any point during the takeoff before reaching 105 percent of minimum control speed (the minimum speed at which an airplane can be safely controlled in flight after an engine becomes inoperative) or 115 percent of the power off stalling speed in the takeoff configuration, whichever is greater.  
*Sources:* 121.199(a); 121.135(b)(13)  
*Interfaces:* 2.1.2–op; 3.2.1–op; 2.1.2–aw; 1.1.1–aw; 4.2.11–op; 4.2.5–op; 4.2.3–op
21. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no

person operating a non transport category airplane may take off that airplane at a weight greater than the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway, from any point during the takeoff before reaching 105 percent of minimum control speed (the minimum speed at which an airplane can be safely controlled in flight after an engine becomes inoperative) or 115 percent of the power off stalling speed in the takeoff configuration, whichever is greater.

*Sources:* 121.199(a); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.5–op; 1.1.1–aw; 4.2.3–op; 2.1.2–aw; 4.2.11–op; 2.1.2–op; 3.2.1–op

22. Check that the Certificate Holder's manual system includes procedures to ensure that, except as provided in FAR 121.201(b), no person operating a non transport category airplane may take off that airplane at a weight that does not allow a rate of climb of at least 50 feet a minute, with the critical engine inoperative, at an altitude of at least 1,000 feet above the highest obstruction within five miles on each side of the intended track, or 5,000 feet, whichever is higher.

*Sources:* 121.201(a); 121.135(b)(13)

*Interfaces:* 2.1.2–aw; 4.2.11–op; 4.2.3–op; 4.2.5–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw

23. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, except as provided in FAR 121.201(b), no person operating a non transport category airplane may take off that airplane at a weight that does not allow a rate of climb of at least 50 feet a minute, with the critical engine inoperative, at an altitude of at least 1,000 feet above the highest obstruction within five miles on each side of the intended track, or 5,000 feet, whichever is higher.

*Sources:* 121.201(a); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 4.2.3–op; 4.2.5–op; 2.1.2–aw

24. Check that the Certificate Holder's manual system contains a procedure to ensure that, except as provided FAR 121.173(c), no person may take off a reciprocating–engine–powered airplane at a weight that is more than the allowable weight for the runway being used (determined under the runway takeoff limitations of the transport category operating rules of 14 CFR part 121, subpart I) after taking into account the temperature operating correction factors in the applicable Airplane Flight Manual.

*Sources:* 121.173(e); 121.135(b)(13)

*Interfaces:* 1.1.1–aw; 2.1.2–aw; 4.2.5–op; 4.2.3–op; 4.2.11–op; 2.1.2–op; 3.2.1–op

25. Check that the Certificate Holder's manual system includes instructions and information to its personnel that will ensure that, except as provided in FAR 121.173(c), no person may take off a reciprocating–engine–powered airplane at a weight that is more than the allowable weight for the runway being used (determined under the runway takeoff limitations of the transport category

- operating rules of 14 CFR part 121, subpart I) after taking into account the temperature operating correction factors in the applicable Airplane Flight Manual.  
*Sources:* 121.173(e); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–op; 4.2.11–op; 1.1.1–aw; 4.2.5–op; 3.2.1–op; 4.2.3–op; 2.1.2–aw
26. Check that the Certificate Holder's manual system contains instructions and information that the Administrator may authorize in the operations specifications deviations from the requirements in the subpart if special circumstances make a literal observance of a requirement unnecessary for safety.  
*Sources:* 121.135(a)(1); 121.173(f)  
*Interfaces:* 2.1.2–op; 3.2.1–op; 1.1.1–aw; 4.2.11–op; 2.1.2–aw; 4.2.5–op; 4.2.3–op
27. Check that the Certificate Holder's manual contains instructions and information to its personnel that when the ten-mile width specified in FAR 121.179 through 121.183 is reduced to five miles, for not more than 20 miles, that operations are VFR or they have verified that navigation facilities furnish reliable and accurate identification of high ground and obstructions located outside of five miles, but within ten miles, on each side of the intended track.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 121.173(g)  
*Interfaces:* 4.2.5–op; 3.2.1–op; 4.2.3–op; 1.1.1–aw; 2.1.2–aw; 4.2.11–op; 2.1.2–op
28. Check that the Certificate Holder's manual system includes procedures to ensure that no person may take off a reciprocating engine powered airplane from an airport located at an elevation outside of the range for which maximum takeoff weights have been determined for that airplane.  
*Sources:* 121.175(a); 121.135(b)(13)  
*Interfaces:* 2.1.2–aw; 4.2.5–op; 4.2.11–op; 4.2.3–op; 2.1.2–op; 1.1.1–aw; 3.2.1–op
29. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may take off a reciprocating engine powered transport category airplane from an airport located at an elevation outside of the range for which maximum takeoff weights have been determined for that airplane.  
*Sources:* 121.175(a); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 2.1.2–aw; 4.2.3–op; 1.1.1–aw; 4.2.5–op
30. Check that the Certificate Holder's manual system includes procedures to ensure that no person may take off a reciprocating engine powered transport category airplane for an airport of intended destination that is located at an elevation outside of the range for which maximum landing weights have been determined for that airplane.  
*Sources:* 121.175(b); 121.135(b)(13)  
*Interfaces:* 2.1.2–op; 4.2.3–op; 4.2.5–op; 3.2.1–op; 2.1.2–aw; 1.1.1–aw; 4.2.11–op

31. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may take off a reciprocating engine powered transport category airplane for an airport of intended destination that is located at an elevation outside of the range for which maximum landing weights have been determined for that airplane.  
*Sources:* 121.175(b); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.11-op; 2.1.2-op; 4.2.5-op; 3.2.1-op
32. Check that the Certificate Holder's manual system includes procedures to ensure that no person may specify, or have specified, an alternate airport that is located at an elevation outside of the range for which maximum landing weights have been determined for the reciprocating engine powered transport category airplane concerned.  
*Sources:* 121.175(c); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 4.2.5-op; 2.1.2-aw
33. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may specify, or have specified, an alternate airport that is located at an elevation outside of the range for which maximum landing weights have been determined for the reciprocating engine powered transport category airplane concerned.  
*Sources:* 121.175(c); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.11-op; 1.1.1-aw; 3.2.1-op; 2.1.2-aw; 4.2.5-op; 4.2.3-op
34. Check that the Certificate Holder's manual system includes procedures to ensure that no person may take off a reciprocating engine powered transport category airplane at a weight more than the maximum authorized takeoff weight for the elevation of the airport.  
*Sources:* 121.175(d); 121.135(b)(13)  
*Interfaces:* 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 2.1.2-op; 4.2.11-op
35. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may take off a reciprocating engine powered transport category airplane at a weight more than the maximum authorized takeoff weight for the elevation of the airport.  
*Sources:* 121.175(d); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-aw; 4.2.5-op; 4.2.3-op; 4.2.11-op; 2.1.2-op; 1.1.1-aw; 3.2.1-op
36. Check that the Certificate Holder's manual system includes procedures to ensure that no person may take off a reciprocating engine powered transport category airplane if its weight on arrival at the airport of destination will be more than the maximum authorized landing weight for the elevation of that airport.  
*Sources:* 121.175(e); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 1.1.1-aw; 2.1.2-op; 4.2.5-op; 3.2.1-op

- 4.2.3-op; 2.1.2-aw
37. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may take off a reciprocating engine powered transport category airplane if its weight on arrival at the airport of destination will be more than the maximum authorized landing weight for the elevation of that airport.  
*Sources:* 121.175(e); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op
  38. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible to stop the airplane safely on the runway, as shown by the accelerate stop distance data, at any time during takeoff until reaching critical-engine failure speed.  
*Sources:* 121.177(a)(1); 121.135(b)(13)  
*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op; 4.2.11-op; 3.2.1-op; 2.1.2-op
  39. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible to stop the airplane safely on the runway, as shown by the accelerate stop distance data, at any time during takeoff until reaching critical-engine failure speed.  
*Sources:* 121.177(a)(1); 121.135(b)(9); 121.135(a)(1)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 2.1.2-aw; 4.2.3-op; 4.2.5-op; 1.1.1-aw
  40. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible if the critical engine fails at any time after the airplane reaches critical-engine failure speed V<sub>1</sub>, to continue the takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway.  
*Sources:* 121.177(a)(2); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op
  41. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible if the critical engine fails at any time after the airplane reaches critical-engine failure speed V<sub>1</sub>, to continue the takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway.  
*Sources:* 121.177(a)(2); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 4.2.11-op; 2.1.2-op

42. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible to clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and thereafter without banking more than 15 degrees.  
*Sources:* 121.177(a)(3); 121.135(b)(13)  
*Interfaces:* 2.1.2-aw; 4.2.11-op; 4.2.5-op; 2.1.2-op; 4.2.3-op; 1.1.1-aw; 3.2.1-op
43. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a reciprocating engine powered transport category airplane may takeoff that airplane unless it is possible to clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and thereafter without banking more than 15 degrees.  
*Sources:* 121.177(a)(3); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw
44. Check that the Certificate Holder's manual system includes procedures to ensure that corrections must be made for the effective runway gradient. To allow for wind effect, takeoff data based on still air may be corrected by taking into account not more than 50 percent of any reported headwind component and not less than 150 percent of any reported tailwind component.  
*Sources:* 121.177(b); 121.135(b)(13)  
*Interfaces:* 2.1.2-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op
45. Check that the Certificate Holder's manual system includes instructions and information to ensure that corrections must be made for the effective runway gradient. To allow for wind effect, takeoff data based on still air may be corrected by taking into account not more than 50 percent of any reported headwind component and not less than 150 percent of any reported tailwind component.  
*Sources:* 121.175(b); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op; 2.1.2-op; 3.2.1-op; 4.2.11-op
46. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a reciprocating engine powered transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with all engines operating, of at least 6.90 VSO (that is, the number of feet per minute is obtained by multiplying the number of knots by 6.90) at

- an altitude of at least 1,000 feet above the highest ground or obstruction within ten miles of each side of the intended track.  
*Sources:* 121.179(a); 121.135(b)(13)  
*Interfaces:* 4.2.3–op; 4.2.11–op; 4.2.5–op; 2.1.2–op; 3.2.1–op; 2.1.2–aw; 1.1.1–aw
47. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a reciprocating engine powered transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with all engines operating, of at least 6.90 VSO (that is, the number of feet per minute is obtained by multiplying the number of knots by 6.90) at an altitude of at least 1,000 feet above the highest ground or obstruction within ten miles of each side of the intended track.  
*Sources:* 121.179(a); 121.135(b)(9); 121.135(a)(1)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.3–op; 4.2.5–op
48. Check that the Certificate Holder's manual system includes procedures to ensure that, except as provided FAR 121.181(b), no person operating a reciprocating engine powered transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with one engine inoperative, of at least  $(0.079-0.106/N)$  VSO<sub>2</sub> (where N is the number of engines installed and VSO is expressed in knots) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track. However, for the purposes of this paragraph the rate of climb for transport category airplanes certificated under Part 4a of the Civil Air Regulations is 0.026 VSO<sub>2</sub>.  
*Sources:* 121.181(a); 121.135(b)(13)  
*Interfaces:* 4.2.5–op; 3.2.1–op; 1.1.1–aw; 4.2.3–op; 2.1.2–aw; 4.2.11–op; 2.1.2–op
49. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that except as provided FAR 121.181(b), no person operating a reciprocating engine powered transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with one engine inoperative, of at least  $(0.079-0.106/N)$  VSO<sub>2</sub> (where N is the number of engines installed and VSO is expressed in knots) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track. However, for the purposes of this paragraph the rate of climb for transport category airplanes certificated under Part 4a of the Civil Air Regulations is 0.026 VSO<sub>2</sub>.  
*Sources:* 121.181(a); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–aw; 4.2.5–op; 4.2.11–op; 4.2.3–op; 1.1.1–aw; 2.1.2–op; 3.2.1–op
50. Check that the Certificate Holder's manual system includes



<p>procedures, that, if applicable, in place of the requirements of FAR 121.181(a), a person may, under an approved procedure, operate a reciprocating engine powered transport category airplane, at an all-engines-operating altitude that allows the airplane to continue, after an engine failure, to an alternate airport where a landing can be made in accordance with FAR 121.187, allowing for normal consumption of fuel and oil. after the assumed failure, the flight path must clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet.</p> <p><i>Sources:</i> 121.181(b); 121.135(b)(13)</p> <p><i>Interfaces:</i> 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.5-op; 4.2.3-op; 2.1.2-aw</p> <p>51. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, if applicable, in place of the requirements of FAR 121.181(a), a person may, under an approved procedure, operate a reciprocating engine powered transport category airplane, at an all-engines-operating altitude that allows the airplane to continue, after an engine failure, to an alternate airport where a landing can be made in accordance with FAR 121.187, allowing for normal consumption of fuel and oil. After the assumed failure, the flight path must clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet.</p> <p><i>Sources:</i> 121.181(b); 121.135(a)(1); 121.135(b)(9)</p> <p><i>Interfaces:</i> 4.2.3-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.5-op; 2.1.2-aw; 4.2.11-op</p>	
<p>1.7 Does the Certificate Holder's manual contain procedures for determining en route limitations?</p> <p><i>SRRs:</i> 121.179(a); 121.181(a); 121.181(b); 121.181(c)(1); 121.181(c)(2); 121.181(c)(3); 121.181(c)(4); 121.181(c)(5); 121.181(c)(6); 121.183(a)(1); 121.183(a)(2); 121.191(a)(1); 121.191(a)(2); 121.193(a)(1); 121.193(a)(2); 121.193(b)(1); 121.193(b)(2); 121.193(c)(1); 121.193(c)(2); 121.201(a); 121.201(b)</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that if an approved procedure under FAR 121.181(b) is used in complying with this procedure fuel jettisoning is allowed if the Certificate Holder shows that it has an adequate training program, that proper instructions are given to the flight crew, and all other precautions are taken to insure a safe procedure.</p> <p><i>Sources:</i> 121.181(c)(5); 121.135(a)(1); 121.135(b)(9)</p> <p><i>Interfaces:</i> 2.1.2-op; 4.2.11-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op</p> <p>2. Check that the Certificate Holder's manual system includes procedures to ensure that if an approved procedure under FAR 121.181(b) is used, the Certificate Holder shall specify in the dispatch or flight release an alternate airport that meets the requirements of FAR 121.625.</p> <p><i>Sources:</i> 121.181(c)(6); 121.135(b)(13)</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No, Explain</p>

- Interfaces:* 3.2.1–op; 4.2.3–op; 4.2.5–op; 2.1.2–aw; 1.1.1–aw; 4.2.11–op; 2.1.2–op
3. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that if an approved procedure under FAR 121.181(b) is used, the Certificate Holder shall specify in the dispatch or flight release an alternate airport that meets the requirements of FAR 121.625.  
*Sources:* 121.181(c)(6); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–aw; 4.2.5–op; 4.2.3–op; 2.1.2–op; 4.2.11–op; 3.2.1–op; 1.1.1–aw
  4. Check that the Certificate Holder's manual system includes procedures to ensure that no person may operate an airplane certificated under Part 25 and having four or more reciprocating engines and two inoperative unless there is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.187.  
*Sources:* 121.183(a)(1); 121.135(b)(13)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 4.2.5–op; 4.2.3–op; 1.1.1–aw; 2.1.2–aw
  5. Check that the Certificate Holder's manual system includes procedures to ensure that no person may operate an airplane certificated under Part 25 and having four or more engines reciprocating engines and two inoperative unless it is operated at a weight allowing the airplane, with the two critical engines inoperative, to climb at 0.013 VSO2 feet per minute (that is, the number of feet per minute is obtained by multiplying the number of knots squared by 0.013) at an altitude of 1,000 feet above the highest ground or obstruction within 10 miles on each side of the intended track, or at an altitude of 5,000 feet, whichever is higher.  
*Sources:* 121.183(a)(2); 121.135(b)(13)  
*Interfaces:* 2.1.2–op; 3.2.1–op; 1.1.1–aw; 4.2.11–op; 4.2.5–op; 2.1.2–aw; 4.2.3–op
  6. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may operate an airplane certificated under Part 25 and having four or more engines unless there is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.187.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 121.183(a)(1)  
*Interfaces:* 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 4.2.3–op; 4.2.11–op; 2.1.2–op; 3.2.1–op
  7. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may operate an airplane certificated under Part 25 and having four or more engines unless it is operated at a weight allowing the airplane, with the two critical engines inoperative, to climb at 0.013 VSO2 feet per minute (that is, the number of feet per minute is obtained by multiplying the number of knots squared by

0.013) at an altitude of 1,000 feet above the highest ground or obstruction within 10 miles on each side of the intended track, or at an altitude of 5,000 feet, whichever is higher.

*Sources:* 121.135(a)(1); 121.135(b)(9); 121.183(a)(2)

*Interfaces:* 2.1.2–aw; 4.2.11–op; 4.2.5–op; 3.2.1–op; 1.1.1–aw; 2.1.2–op; 4.2.3–op

8. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) will allow compliance with paragraph FAR 121.191(a) (1) or (2), based on the ambient temperatures expected en route: There is a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, and, in addition, if that airplane was certificated after August 29, 1959 (SR 422B) there is a positive slope at 1,500 feet above the airport where the airplane is assumed to land after an engine fails.

*Sources:* 121.191(a)(1); 121.135(b)(13)

*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 4.2.3–op; 4.2.5–op; 1.1.1–aw; 2.1.2–aw

9. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) will allow compliance with paragraph FAR 121.191(a) (1) or (2), based on the ambient temperatures expected en route: There is a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, and, in addition, if that airplane was certificated after August 29, 1959 (SR 422B) there is a positive slope at 1,500 feet above the airport where the airplane is assumed to land after an engine fails.

*Sources:* 121.191(a)(1); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 2.1.2–op; 4.2.3–op; 4.2.5–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.11–op

10. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) based on the ambient temperatures expected en route, the net flight path allows the airplane to continue flight from the cruising altitude to an airport where a landing can be made under FAR 121.197, clearing all terrain and obstructions within five statute miles of the intended track by at least 2,000 feet vertically and with a positive slope at

1,000 feet above the airport where the airplane lands after an engine fails, or, if that airplane was certificated after September 30, 1958 (SR 422A, 422B), with a positive slope at 1,500 feet above the airport where the airplane lands after an engine fails.

*Sources:* 121.191(a)(2); 121.135(b)(13)

*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op; 2.1.2-op; 4.2.11-op; 3.2.1-op

11. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a turbine engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) based on the ambient temperatures expected en route, the net flight path allows the airplane to continue flight from the cruising altitude to an airport where a landing can be made under FAR 121.197, clearing all terrain and obstructions within five statute miles of the intended track by at least 2,000 feet vertically and with a positive slope at 1,000 feet above the airport where the airplane lands after an engine fails, or, if that airplane was certificated after September 30, 1958 (SR 422A, 422B), with a positive slope at 1,500 feet above the airport where the airplane lands after an engine fails.

*Sources:* 121.191(a)(2); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 4.2.3-op; 2.1.2-aw; 4.2.5-op; 1.1.1-aw

12. Check that the Certificate Holder's manual system includes procedures to ensure that, for airplanes certificated after August 26, 1957, but before October 1, 1958 (SR 422), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR 121.197.

*Sources:* 121.193(a)(1); 121.135(b)(13)

*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op

13. Check that the Certificate Holder's manual system includes procedures to ensure that, for airplanes certificated after August 26, 1957, but before October 1, 1958 (SR 422), no person may operate a turbine engine powered transport category airplane along an intended route unless he complies with either of the following: Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with a net flight path (considering the ambient temperature anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five miles on each side of the intended track, or at an altitude of 5,000 feet,

whichever is higher.

*Sources:* 121.193(a)(2); 121.135(b)(13)

*Interfaces:* 4.2.11-op; 2.1.2-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw;  
4.2.3-op; 2.1.2-aw

14. Check that the Certificate Holder's manual system includes instructions and information to ensure that, for airplanes certificated after August 26, 1957, but before October 1, 1958 (SR 422, no person may operate a turbine engine powered transport category airplane along an intended route unless he complies with either of the following: There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.197.  
*Sources:* 121.193(a)(1); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.3-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op; 4.2.5-op
15. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, for airplanes certificated after August 26, 1957, but before October 1, 1958 (SR 422, no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with a net flight path (considering the ambient temperature anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five miles on each side of the intended track, or at an altitude of 5,000 feet, whichever is higher.  
*Sources:* 121.193(a)(2); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.5-op; 4.2.11-op; 4.2.3-op; 2.1.2-aw; 3.2.1-op; 1.1.1-aw
16. Check that the Certificate Holder's manual system includes procedures to ensure that, for aircraft certificated after September 30, 1958, but before August 30, 1959 (SR422A), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.197.  
*Sources:* 121.193(b)(1); 121.135(b)(13)  
*Interfaces:* 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 2.1.2-op; 4.2.11-op
17. Check that the Certificate Holder's manual system includes procedures to ensure that, for aircraft certificated after September 30, 1958, but before August 30, 1959 (SR422A), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (2) Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the

point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with a net flight path (considering the ambient temperatures anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within 5 miles on each side of the intended track, or at an altitude of 2,000 feet, whichever is higher.

*Sources:* 121.193(b)(2); 121.135(b)(13)

*Interfaces:* 1.1.1-aw; 4.2.5-op; 4.2.3-op; 2.1.2-aw; 4.2.11-op; 2.1.2-op; 3.2.1-op

18. Check that the Certificate Holder's manual system includes instructions and information to ensure that, for aircraft certificated after September 30, 1958, but before August 30, 1959 (SR422A), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.197.  
*Sources:* 121.193(b)(1); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-aw; 4.2.11-op; 4.2.3-op; 2.1.2-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw
19. Check that the Certificate Holder's manual system includes instructions and information to ensure that, for aircraft certificated after September 30, 1958, but before August 30, 1959 (SR422A), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (2) Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with a net flight path (considering the ambient temperatures anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within 5 miles on each side of the intended track, or at an altitude of 2,000 feet, whichever is higher.  
*Sources:* 121.193(b)(2); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.11-op; 3.2.1-op; 2.1.2-aw; 4.2.3-op; 1.1.1-aw; 4.2.5-op
20. Check that the Certificate Holder's manual system includes procedures to ensure that, for aircraft certificated after August 29, 1959 (SR 422B), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR121.197.  
*Sources:* 121.193(c)(1); 121.135(b)(13)  
*Interfaces:* 2.1.2-aw; 4.2.3-op; 2.1.2-op; 4.2.11-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw
21. Check that the Certificate Holder's manual system includes procedures to ensure that, for aircraft certificated after August 29, 1959 (SR 422B), no person may operate a turbine engine powered

airplane along an intended route unless he complies with either of the following: (2) Its weight, according to the two-engine inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with the net flight path (considering the ambient temperatures anticipated along the track) clearing vertically by at least 2,000 feet all terrain and obstructions within five statute miles (4.34 nautical miles) on each side of the intended track.

*Sources:* 121.193(c)(2); 121.135(b)(13)

*Interfaces:* 2.1.2-op; 1.1.1-aw; 3.2.1-op; 4.2.5-op; 2.1.2-aw; 4.2.11-op; 4.2.3-op

22. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, for aircraft certificated after August 29, 1959 (SR 422B), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of FAR 121.197.

*Sources:* 121.193(c)(1); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11-op; 2.1.2-op; 1.1.1-aw; 3.2.1-op; 2.1.2-aw; 4.2.5-op; 4.2.3-op

23. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, for aircraft certificated after August 29, 1959 (SR 422B), no person may operate a turbine engine powered airplane along an intended route unless he complies with either of the following: (2) Its weight, according to the two-engine inoperative, en route, net flight path data in the Airplane Flight Manual, allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets the requirements of FAR 121.197, with the net flight path (considering the ambient temperatures anticipated along the track) clearing vertically by at least 2,000 feet all terrain and obstructions within five statute miles (4.34 nautical miles) on each side of the intended track.

*Sources:* 121.193(c)(2); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11-op; 2.1.2-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw

24. Check that the Certificate Holder's manual contains procedures that not withstanding paragraph (a) of this section, if the Administrator finds that safe operations are not impaired, a person may operate the airplane at an altitude that allows the airplane, in case of engine failure, to clear all obstructions within 5 miles on each side of the intended track by 1,000 feet. If this procedure is used, the rate of descent for the appropriate weight and altitude is assumed to be 50 feet a minute greater than the rate in the approved performance data. Before approving such a procedure, the Administrator considers the following for the route, route segment, or area

- concerned: (1) The reliability of wind and weather forecasting. (2) The location and kinds of navigation aids. (3) The prevailing weather conditions, particularly the frequency and amount of turbulence normally encountered. (4) Terrain features. (5) Air traffic control problems. (6) Any other operational factors that affect the operation.  
*Sources:* 121.135(b)(13); 121.201(b)(1); 121.201(b)(2); 121.201(b)(3); 121.201(b)(4); 121.201(b)(5); 121.201(b)(6)  
*Interfaces:* 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op; 2.1.2-op
25. Check that the Certificate Holder's manual contains instructions and information to its personnel that not withstanding paragraph (a) of this section, if the Administrator finds that safe operations are not impaired, a person may operate the airplane at an altitude that allows the airplane, in case of engine failure, to clear all obstructions within 5 miles on each side of the intended track by 1,000 feet. If this procedure is used, the rate of descent for the appropriate weight and altitude is assumed to be 50 feet a minute greater than the rate in the approved performance data. Before approving such a procedure, the Administrator considers the following for the route, route segment, or area concerned: (1) The reliability of wind and weather forecasting. (2) The location and kinds of navigation aids. (3) The prevailing weather conditions, particularly the frequency and amount of turbulence normally encountered. (4) Terrain features. (5) Air traffic control problems. (6) Any other operational factors that affect the operation.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 121.201(b)(1); 121.201(b)(2); 121.201(b)(3); 121.201(b)(4); 121.201(b)(5); 121.201(b)(6)  
*Interfaces:* 2.1.2-aw; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.11-op; 2.1.2-op
26. Check that the Certificate Holder's manual system includes procedures, that, if applicable, in place of the requirements of FAR 121.181(a), a person may, under an approved procedure, operate a reciprocating engine powered transport category airplane, at an all-engines-operating altitude that allows the airplane to continue, after an engine failure, to an alternate airport where a landing can be made in accordance with FAR 121.187, allowing for normal consumption of fuel and oil. after the assumed failure, the flight path must clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet.  
*Sources:* 121.181(b); 121.135(b)(13)  
*Interfaces:* 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.5-op; 4.2.3-op; 2.1.2-aw
27. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, if applicable, in place of the requirements of FAR 121.181(a), a person may, under an approved procedure, operate a reciprocating engine powered transport category airplane, at an all-engines-operating altitude that allows the airplane to continue, after an engine failure, to an alternate airport where a landing can



be made in accordance with FAR 121.187, allowing for normal consumption of fuel and oil. After the assumed failure, the flight path must clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet.

*Sources:* 121.181(b); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.3–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 4.2.11–op

28. Check that the Certificate Holder's manual system includes procedures, that, if an approved procedure under FAR 121.181(b) is used, the rate of climb (as prescribed in the Airplane Flight Manual for the appropriate weight and altitude) used in calculating the airplane's flight path shall be diminished by an amount, in feet per minute, equal to  $(0.079-0.106/N)$  VSO2 (when N is the number of engines installed and VSO is expressed in knots) for airplanes certificated under Part 25 of this chapter and by 0.026 VSO2 for airplanes certificated under Part 4a of the Civil Air Regulations.  
*Sources:* 121.181(c)(1); 121.135(b)(13)  
*Interfaces:* 1.1.1–aw; 2.1.2–aw; 4.2.3–op; 4.2.5–op; 4.2.11–op; 2.1.2–op; 3.2.1–op
29. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, if an approved procedure under FAR 121.181(b) is used, the rate of climb (as prescribed in the Airplane Flight Manual for the appropriate weight and altitude) used in calculating the airplane's flight path shall be diminished by an amount, in feet per minute, equal to  $(0.079-0.106/N)$  VSO2 (when N is the number of engines installed and VSO is expressed in knots) for airplanes certificated under Part 25 of this chapter and by 0.026 VSO2 for airplanes certificated under Part 4a of the Civil Air Regulations.  
*Sources:* 121.181(c)(1); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–aw; 4.2.11–op; 2.1.2–op; 4.2.3–op; 3.2.1–op; 4.2.5–op; 1.1.1–aw
30. Check that the Certificate Holder's manual system includes procedures that, if an approved procedure under FAR 121.181(b) is used, the all-engines–operating altitude shall be sufficient so that in the event the critical engine becomes inoperative at any point along the route, the flight will be able to proceed to a predetermined alternate airport by use of this procedure. In determining the takeoff weight, the airplane is assumed to pass over the critical obstruction following engine failure at a point no closer to the critical obstruction than the nearest approved radio navigational fix, unless the Administrator approves a procedure established on a different basis upon finding that adequate operational safeguards exist.  
*Sources:* 121.181(c)(2); 121.135(b)(13)  
*Interfaces:* 3.2.1–op; 4.2.11–op; 2.1.2–op; 2.1.2–aw; 1.1.1–aw; 4.2.3–op; 4.2.5–op
31. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, if an approved procedure under FAR 121.181(b) is used, the all-engines–operating altitude shall be sufficient so that in the event the critical engine

becomes inoperative at any point along the route, the flight will be able to proceed to a predetermined alternate airport by use of this procedure. In determining the takeoff weight, the airplane is assumed to pass over the critical obstruction following engine failure at a point no closer to the critical obstruction than the nearest approved radio navigational fix, unless the Administrator approves a procedure established on a different basis upon finding that adequate operational safeguards exist.

*Sources:* 121.181(c)(2); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 3.2.1–op; 4.2.3–op; 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 2.1.2–op; 4.2.11–op

32. Check that the Certificate Holder's manual system includes procedures to ensure that if an approved procedure under FAR 121.181(b) is used, the airplane must meet the provisions of FAR 121.181(a) at 1,000 feet above the airport used as an alternate in this procedure.  
*Sources:* 121.181(c)(3); 121.135(b)(13)  
*Interfaces:* 2.1.2–aw; 4.2.11–op; 4.2.5–op; 4.2.3–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw
33. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that if an approved procedure under FAR 121.181(b) is used, the airplane must meet the provisions FAR 121.181(a) at 1,000 feet above the airport used as an alternate in this procedure.  
*Sources:* 121.181(c)(3); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 4.2.5–op; 3.2.1–op; 4.2.3–op; 1.1.1–aw; 2.1.2–aw
34. Check that the Certificate Holder's manual system includes procedures to ensure that if an approved procedure under FAR 121.181(b) is used, the procedure must include an approved method of accounting for winds and temperatures that would otherwise adversely affect the flight path.  
*Sources:* 121.181(c)(4); 121.135(b)(13)  
*Interfaces:* 4.2.3–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.5–op; 4.2.11–op
35. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that if an approved procedure under FAR 121.181(b) is used, the procedure must include an approved method of accounting for winds and temperatures that would otherwise adversely affect the flight path.  
*Sources:* 121.181(c)(4); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 1.1.1–aw; 2.1.2–aw; 4.2.5–op; 4.2.3–op; 4.2.11–op; 3.2.1–op; 2.1.2–op
36. Check that the Certificate Holder's manual system includes procedures to ensure that if an approved procedure under FAR 121.181(b) is used in complying with this procedure fuel jettisoning is allowed if the Certificate Holder shows that it has an adequate training program, that proper instructions are given to the flight crew, and all other precautions are taken to insure a safe procedure.  
*Sources:* 121.181(c)(5); 121.135(b)(13)

<p><i>Interfaces:</i> 2.1.2–aw; 4.2.11–op; 4.2.5–op; 1.1.1–aw; 2.1.2–op; 4.2.3–op; 3.2.1–op</p>	
<p>1.8 Does the Certificate Holder's manual contain procedures for determining landing limitations?  SRRs: 121.185(a); 121.187(a); 121.195(a); 121.195(b); 121.195(c); 121.195(d); 121.195(e); 121.197; 121.198(a); 121.198(b)(1); 121.198(b)(2); 121.198(b)(3); 121.198(b)(4); 121.198(c); 121.198(d); 121.198(e); 121.198(f); 121.198(g); 121.203(a)(1); 121.203(a)(2); 121.205; 121.185(b); 121.198(a)(1); 121.198(a)(2)</p> <p><i>Related Design JTI's:</i></p> <ol style="list-style-type: none"> <li>1. Check that the Certificate Holder's manual system includes procedures to ensure that, except as provided in FAR 121.185(b), no person operating a reciprocating engine powered airplane may take off that airplane, unless its weight on arrival, allowing for normal consumption of fuel and oil in flight, would allow a full stop landing at the intended destination within 60 percent of the effective length of each runway described below from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway.  <i>Sources:</i> 121.185(a); 121.135(b)(13)  <i>Interfaces:</i> 4.2.11–op; 2.1.2–op; 1.1.1–aw; 3.2.1–op; 2.1.2–aw; 4.2.5–op; 4.2.3–op</li> <li>2. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, except as provided in FAR 121.185(b), no person operating a reciprocating engine powered airplane may take off that airplane, unless its weight on arrival, allowing for normal consumption of fuel and oil in flight, would allow a full stop landing at the intended destination within 60 percent of the effective length of each runway described below from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway.  <i>Sources:</i> 121.185(a); 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 3.2.1–op; 4.2.3–op; 4.2.5–op; 1.1.1–aw; 2.1.2–aw; 2.1.2–op; 4.2.11–op</li> <li>3. Check that the Certificate Holder's manual system includes procedures to ensure that a reciprocating engine powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.185(a)(2) may be taken off if an alternate airport is specified that meets all of the requirements of FAR 121.185 except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.  <i>Sources:</i> 121.135(b)(13); 121.185(b)  <i>Interfaces:</i> 2.1.2–aw; 4.2.3–op; 4.2.5–op; 3.2.1–op; 4.2.11–op; 2.1.2–op; 1.1.1–aw</li> <li>4. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that a reciprocating engine powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.185(a)(2) may be taken off if an alternate airport is specified that meets all of the requirements of FAR 121.185 except that the airplane can accomplish a full stop landing within 70 percent of the</li> </ol>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>

effective length of the runway.

*Sources:* 121.135(a)(1); 121.135(b)(9); 121.185(b)

*Interfaces:* 2.1.2-op; 4.2.11-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw

5. Check that the Certificate Holder's manual system includes procedures to ensure that no person may list an airport as an alternate airport in a dispatch or flight release unless the airplane (at the weight anticipated at the time of arrival at the airport), based on the assumptions in FAR 121.185, can be brought to a full stop landing, within 70 percent of the effective length of the runway.  
*Sources:* 121.187(a); 121.135(b)(13)  
*Interfaces:* 2.1.2-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op; 4.2.11-op
6. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may list an airport as an alternate airport in a dispatch or flight release unless the airplane (at the weight anticipated at the time of arrival at the airport), based on the assumptions in FAR 121.185, can be brought to a full stop landing, within 70 percent of the effective length of the runway.  
*Sources:* 121.187(a); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 4.2.5-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 4.2.11-op; 2.1.2-op; 3.2.1-op
7. Check that the Certificate Holder's manual system includes procedures to ensure that, no person operating a turbine engine powered airplane may take off that airplane at such a weight that (allowing for normal consumption of fuel and oil in flight to the destination or alternate airport) the weight of the airplane on arrival would exceed the landing weight set forth in the Airplane Flight Manual for the elevation of the destination or alternate airport and the ambient temperature anticipated at the time of landing.  
*Sources:* 121.195(a); 121.135(b)(13)  
*Interfaces:* 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 4.2.11-op; 2.1.2-op
8. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, no person operating a turbine engine powered airplane may take off that airplane at such a weight that (allowing for normal consumption of fuel and oil in flight to the destination or alternate airport) the weight of the airplane on arrival would exceed the landing weight set forth in the Airplane Flight Manual for the elevation of the destination or alternate airport and the ambient temperature anticipated at the time of landing.  
*Sources:* 121.195(a); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2-op; 4.2.3-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op
9. Check that the Certificate Holder's manual system includes procedures to ensure that, except as provided in FAR 121.195 (c),(d), or (e), no person operating a turbine engine powered airplane may take off that airplane unless its weight on arrival,

allowing for normal consumption of fuel and oil in flight (in accordance with the landing distance set forth in the Airplane Flight Manual for the elevation of the destination airport and the wind conditions anticipated there at the time of landing), would allow a full stop landing at the intended destination airport within 60 percent of the effective length of each runway described below from a point 50 feet above the intersection of the obstruction clearance plane and the runway.

*Sources:* 121.135(b)(13); 121.195(b)

*Interfaces:* 2.1.2-aw; 4.2.11-op; 4.2.5-op; 4.2.3-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw

10. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, except as provided in FAR 121.195 (c),(d), or (e), no person operating a turbine engine powered airplane may take off that airplane unless its weight on arrival, allowing for normal consumption of fuel and oil in flight (in accordance with the landing distance set forth in the Airplane Flight Manual for the elevation of the destination airport and the wind conditions anticipated there at the time of landing), would allow a full stop landing at the intended destination airport within 60 percent of the effective length of each runway described below from a point 50 feet above the intersection of the obstruction clearance plane and the runway.

*Sources:* 121.195(b); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11-op; 2.1.2-op; 1.1.1-aw; 3.2.1-op; 4.2.5-op; 2.1.2-aw; 4.2.3-op

11. Check that the Certificate Holder's manual system includes procedures to ensure that a turbopropeller powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.195(b)(2), may be taken off if an alternate airport is specified that meets all the requirements of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.

*Sources:* 121.195(c); 121.135(b)(13)

*Interfaces:* 1.1.1-aw; 2.1.2-aw; 4.2.5-op; 4.2.3-op; 3.2.1-op; 2.1.2-op; 4.2.11-op

12. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that a turbopropeller powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.195(b)(2), may be taken off if an alternate airport is specified that meets all the requirements of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.

*Sources:* 121.195(c); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.5-op; 3.2.1-op; 4.2.3-op; 1.1.1-aw; 2.1.2-aw; 4.2.11-op; 2.1.2-op

13. Check that the Certificate Holder's manual system includes procedures to ensure that unless, based on a showing of actual operating landing techniques on wet runways, a shorter landing

distance (but never less than that required by FAR 121.195(b) has been approved for a specific type and model airplane and included in the Airplane Flight Manual, no person may takeoff a turbojet powered airplane when the appropriate weather reports and forecasts, or a combination thereof, indicate that the runways at the destination airport may be wet or slippery at the estimated time of arrival unless the effective runway length at the destination airport is at least 115 percent of the runway length required under FAR 121.195(b).

*Sources:* 121.135(b)(13); 121.195(d)

*Interfaces:* 2.1.2-aw; 4.2.11-op; 4.2.5-op; 4.2.3-op; 2.1.2-op; 1.1.1-aw; 3.2.1-op

14. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that unless, based on a showing of actual operating landing techniques on wet runways, a shorter landing distance (but never less than that required by FAR 121.195(b) has been approved for a specific type and model airplane and included in the Airplane Flight Manual, no person may takeoff a turbojet powered airplane when the appropriate weather reports and forecasts, or a combination thereof, indicate that the runways at the destination airport may be wet or slippery at the estimated time of arrival unless the effective runway length at the destination airport is at least 115 percent of the runway length required under FAR 121.195(b).

*Sources:* 121.195(d); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 2.1.2-op; 4.2.3-op; 4.2.5-op; 1.1.1-aw; 3.2.1-op; 4.2.11-op; 2.1.2-aw

15. Check that the Certificate Holder's manual system includes procedures to ensure that, a turbojet powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.195(b)(2), may be taken off if an alternate airport is specified that meets all the requirements of FAR 121.195(b).

*Sources:* 121.135(b)(13); 121.195(e)

*Interfaces:* 4.2.11-op; 3.2.1-op; 2.1.2-op; 1.1.1-aw; 2.1.2-aw; 4.2.3-op; 4.2.5-op

16. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, a turbojet powered airplane that would be prohibited from being taken off because it could not meet the requirements of FAR 121.195(b)(2), may be taken off if an alternate airport is specified that meets all the requirements of FAR 121.195(b).

*Sources:* 121.135(a)(1); 121.135(b)(9); 121.195(e)

*Interfaces:* 2.1.2-aw; 4.2.5-op; 4.2.11-op; 4.2.3-op; 3.2.1-op; 2.1.2-op; 1.1.1-aw

17. Check that the Certificate Holder's manual system includes procedures to ensure that no person may list an airport as an alternate airport in a dispatch or flight release for a turbine engine powered airplane unless (based on then assumptions in FAR 121.195 (b)) that airplane at the weight anticipated at the time of

arrival can be brought to a full stop landing within 70 percent of the effective length of the runway for turbopropeller powered airplanes and 60 percent of the effective length of the runway for turbojet powered airplanes, from a point 50 feet above the intersection of the obstruction clearance plane and the runway. In the case of an alternate airport for departure, as provided in FAR 121.617, allowance may be made for fuel jettisoning in addition to normal consumption of fuel and oil when determining the weight anticipated at the time of arrival.

*Sources:* 121.135(b)(13); 121.197

*Interfaces:* 4.2.11–op; 2.1.2–op; 4.2.5–op; 4.2.3–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw

18. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may list an airport as an alternate airport in a dispatch or flight release for a turbine engine powered airplane unless (based on then assumptions in FAR 121.195 (b) that airplane at the weight anticipated at the time of arrival can be brought to a full stop landing within 70 percent of the effective length of the runway for turbopropeller powered airplanes and 60 percent of the effective length of the runway for turbojet powered airplanes, from a point 50 feet above the intersection of the obstruction clearance plane and the runway. In the case of an alternate airport for departure, as provided in FAR 121.617, allowance may be made for fuel jettisoning in addition to normal consumption of fuel and oil when determining the weight anticipated at the time of arrival.

*Sources:* 121.135(a)(1); 121.135(b)(9); 121.197

*Interfaces:* 1.1.1–aw; 4.2.3–op; 4.2.5–op; 2.1.2–aw; 4.2.11–op; 2.1.2–op; 3.2.1–op

19. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, notwithstanding the applicable structural provisions of the airworthiness regulations but subject to FAR 121.198(b) through (g), a Certificate Holder may operate (for cargo service only) any of the following airplanes (certificated under Part 4b of the Civil Air Regulations effective before March 13, 1956) at increased zero fuel and landing weights— (1) DC–6A, DC–6B, DC–7B, and DC–7C; and (2) L1049B, C, D, E, F, G, and H, and the L1649A when modified in accordance with supplemental type certificate SA 4–1402.

*Sources:* 121.135(a)(1); 121.198(a)(1); 121.198(a)(2)

*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 2.1.2–aw; 4.2.3–op; 4.2.5–op

20. Check that the Certificate Holder's manual system includes instructions and information to its personnel that on airplanes listed in FAR 121.198 (a)(1) and (2) that will ensure that the zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight may be increased beyond the maximum approved in full compliance with applicable regulations only if the Administrator finds that— (1) The increase is not likely to

reduce seriously the structural strength; (2) The probability of sudden fatigue failure is not noticeably increased; (3) The flutter, deformation, and vibration characteristics do not fall below those required by applicable regulations; and (4) All other applicable weight limitations will be met.

*Sources:* 121.198(b)(1); 121.198(b)(2); 121.198(b)(3);

121.135(a)(1); 121.135(b)(4); 121.135(b)(9)

*Interfaces:* 4.2.11–op; 2.1.2–op; 4.2.5–op; 2.1.2–aw; 3.2.1–op; 1.1.1–aw; 4.2.3–op

21. Check that the Certificate Holder's manual system includes instructions and information to its personnel that on airplanes listed in FAR121.198 that no zero fuel weight may be increased by more than five percent, and the increase in the structural landing weight may not exceed the amount, in pounds, of the increase in zero fuel weight.  
*Sources:* 121.135(b)(9); 121.135(a)(1); 121.198(c)  
*Interfaces:* 2.1.2–aw; 4.2.11–op; 2.1.2–op; 4.2.3–op; 3.2.1–op; 1.1.1–aw; 4.2.5–op
22. Check that the Certificate Holder's manual system includes instructions and information to its personnel that on airplanes listed in FAR121.198 that each airplane must be inspected in accordance with the approved special inspection procedures, for operations at increased weights, established and issued by the manufacturer of the type of airplane.  
*Sources:* 121.198(d); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–op; 4.2.11–op; 3.2.1–op; 1.1.1–aw; 4.2.3–op; 4.2.5–op; 2.1.2–aw
23. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure each airplane operated under FAR 121.198 must be operated in accordance with the passenger–carrying performance operating limitations prescribed in FAR Part 121.  
*Sources:* 121.198(e); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 3.2.1–op; 4.2.3–op; 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 4.2.11–op; 2.1.2–op
24. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that the Airplane Flight Manual for each airplane operated under FAR 121.198 must be appropriately revised to include the operating limitations and information needed for operation at the increased weights.  
*Sources:* 121.198(f); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–aw; 4.2.5–op; 4.2.11–op; 4.2.3–op; 3.2.1–op; 1.1.1–aw; 2.1.2–op
25. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that, except as provided for the carrying of persons under FAR 121.583, each airplane operated at an increased weight under FAR 121.198 must, before it is used in passenger service, be inspected under the special inspection procedures for return to passenger service



established and issued by the manufacturer and approved by the Administrator.

*Sources:* 121.198(g); 121.135(a)(1); 121.135(b)(9)

*Interfaces:* 4.2.11–op; 2.1.2–op; 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 3.2.1–op; 4.2.3–op

26. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a non transport category airplane may take off that airplane at a weight that, allowing for anticipated consumption of fuel and oil, is greater than the weight that would allow a full stop landing within 60 percent of the effective length of the most suitable runway at the destination airport.  
*Sources:* 121.203(a)(1); 121.135(b)(13)  
*Interfaces:* 4.2.11–op; 2.1.2–op; 3.2.1–op; 1.1.1–aw; 4.2.5–op; 2.1.2–aw; 4.2.3–op
27. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a non transport category airplane may take off that airplane at a weight that, allowing for anticipated consumption of fuel and oil, is greater than the weight that would allow a full stop landing within 60 percent of the effective length of the most suitable runway at the destination airport.  
*Sources:* 121.203(a)(1); 121.135(a)(1); 121.135(b)(9)  
*Interfaces:* 2.1.2–op; 1.1.1–aw; 3.2.1–op; 4.2.5–op; 4.2.11–op; 2.1.2–aw; 4.2.3–op
28. Check that the Certificate Holder's manual system includes procedures to ensure that no person operating a non transport category airplane may take off that airplane at a weight that is greater than the weight allowable if the landing is to be made on the runway— (i) With the greatest effective length in still air; and (ii) Required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.  
*Sources:* 121.135(b)(13); 121.203(a)(2)(i); 121.203(a)(2)(ii)  
*Interfaces:* 4.2.5–op; 1.1.1–aw; 4.2.3–op; 4.2.11–op; 2.1.2–aw; 2.1.2–op; 3.2.1–op
29. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person operating a non transport category airplane may take off that airplane at a weight that is greater than the weight allowable if the landing is to be made on the runway— (i) With the greatest effective length in still air; and (ii) Required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 121.203(a)(2)(i); 121.203(a)(2)(ii)  
*Interfaces:* 2.1.2–aw; 4.2.5–op; 4.2.11–op; 2.1.2–op; 4.2.3–op; 3.2.1–op; 1.1.1–aw
30. Check that the Certificate Holder's manual system includes procedures to ensure that no person may list an airport as an

<p>alternate airport in a dispatch or flight release for a non transport category airplane unless that airplane (at the weight anticipated at the time of arrival) based on the assumptions contained in FAR 121.203, can be brought to a full stop landing within 70 percent of the effective length of the runway.  <i>Sources:</i> 121.205; 121.135(b)(13)  <i>Interfaces:</i> 4.2.11-op; 2.1.2-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 4.2.5-op; 2.1.2-aw</p> <p>31. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure that no person may list an airport as an alternate airport in a dispatch or flight release for a non transport category airplane unless that airplane (at the weight anticipated at the time of arrival) based on the assumptions contained in FAR 121.203, can be brought to a full stop landing within 70 percent of the effective length of the runway.  <i>Sources:</i> 121.205; 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 4.2.3-op; 3.2.1-op; 4.2.5-op; 2.1.2-aw; 1.1.1-aw; 2.1.2-op; 4.2.11-op</p>	
<p>1.9 Where conditions are different from those in the Airplane Flight Manual, does the manual specify that results be substantially as accurate as direct tests?  <i>SRRs:</i> 121.173(d)  <i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system includes instructions and information to its personnel to ensure the performance data in the Airplane Flight Manual applies in determining compliance with FAR 121.175 through 121.197. Where conditions are different from those on which the performance data is based, compliance is determined by interpolation or by computing the effects of changes in the specific variables if the results of the interpolation or computations are substantially as accurate as the results of direct tests.  <i>Sources:</i> 121.173(d); 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 4.2.11-op; 2.1.2-op; 3.2.1-op; 2.1.2-aw; 1.1.1-aw; 4.2.3-op; 4.2.5-op</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.10 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the related requirements of 14 CFR Section 91.9?  <i>Related CFRs:</i> 91.9(a); 91.9(b)(1); 91.9(b)(2)  <i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system has instructions information to its personnel specifying that no person will operate an aircraft without complying with the operating limitations in the approved Airplane Flight Manual, markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.  <i>Sources:</i> 121.135(a)(1); 91.9(a)  <i>Interfaces:</i> 3.1.3-op; 3.2.1-op; 4.2.5-op; 4.2.3-op; 7.1.3-op; 1.1.1-aw; 2.1.1-aw; 7.1.3-aw; 2.1.1-op; 3.2.2-op; 3.2.3-op</p> <p>2.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

<p>Check that the Certificate Holder has instructions and information to its personnel that no person may operate a U.S.–registered civil aircraft for which an Airplane Flight Manual is required by <sup>a</sup>1.5 of this chapter unless there is available in the aircraft a current, approved Airplane Flight Manual, approved manual material, markings, and placards, or any combination thereof, or the manual provided for in ©21.141(b).</p> <p><i>Sources:</i> 121.135(a)(1); 91.9(b)(1)</p> <p><i>Interfaces:</i> 2.1.1–aw; 1.1.2–aw; 2.1.4–op; 1.3.2–aw; 2.1.1–op; 1.3.1–aw; 4.2.3–op; 4.2.1–aw; 1.1.2–op; 2.1.4–aw; 1.1.1–aw</p> <p>3. Check that the Certificate Holder has instructions and information to its personnel that no person may operate a U.S.–registered civil aircraft for which an Airplane Flight Manual is not required by 21.5 of this chapter, unless there is available in the aircraft a current approved Airplane Flight Manual, approved manual material, markings, and placards, or any combination thereof.</p> <p><i>Sources:</i> 121.135(a)(1); 91.9(b)(2)</p> <p><i>Interfaces:</i> 1.1.1–aw; 4.2.1–aw; 1.3.2–aw; 2.1.1–aw; 2.1.4–op; 1.1.2–op; 2.1.1–op; 4.2.3–op; 2.1.4–aw; 1.1.2–aw; 1.3.1–aw</p>	
<p>1.11 Does the Certificate Holder's Aircraft Performance Operating Limitation process comply with the related requirements of 14 CFR Section 91.323? Related CFRs: 91.323(a)(1); 91.323(b)(4)</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No, Explain</p>
<p>1.12 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the related requirements of 14 CFR Section 91.605? Related CFRs: 91.605(a)(1); 91.605(a)(2); 91.605(a)(3); 91.605(a)(4); 91.605(b)(1); 91.605(b)(2); 91.605(b)(3); 91.605(b)(4)(i); 91.605(b)(4)(ii); 91.605(c)(1); 91.605(c)(2); 91.605(c)(3)</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may take off any transport category airplane (other than a turbine–engine–powered airplane certificated after September 30, 1958) unless the elevations of the airport of intended landing and of all specified alternate airports are within the altitude range for which the maximum landing weights have been determined.</p> <p><i>Sources:</i> 121.135(a)(1); 121.135(b)(9); 91.605(a)(4)</p> <p><i>Interfaces:</i> 1.1.1–aw; 2.1.1–aw; 4.2.3–op; 4.2.5–op; 3.2.2–op; 2.1.1–op; 4.2.11–op; 3.2.1–op</p> <p>2. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may operate a turbine–engine–powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless the takeoff weight does not exceed the takeoff weight specified in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at the time of takeoff.</p> <p><i>Sources:</i> 121.135(a)(1); 121.135(b)(9); 91.605(b)(1)</p> <p><i>Interfaces:</i> 3.2.1–op; 3.2.2–op; 4.2.11–op; 4.2.3–op; 2.1.1–op;</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No, Explain</p>

- 4.2.5-op; 2.1.1-aw; 1.1.1-aw
3. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may operate a turbine-engine-powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless normal consumption of fuel and oil in flight to the airport of intended landing and to the alternate airports will leave a weight on arrival not in excess of the landing weight specified in the Airplane Flight Manual for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(b)(2)  
*Interfaces:* 2.1.1-op; 3.2.1-op; 3.2.2-op; 1.1.1-aw; 2.1.1-aw; 4.2.5-op; 4.2.11-op; 4.2.3-op
  4. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may operate a turbine-engine-powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless the takeoff weight does not exceed the weight shown in the Airplane Flight Manual to correspond with the minimum distances required for takeoff, considering the elevation of the airport, the runway to be used, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if operating limitations exist for the minimum distances required for takeoff from wet runways, the runway surface condition (dry or wet). Wet runway distances associated with grooved or porous friction course runways, if provided in the Airplane Flight Manual, may be used only for runways that are grooved or treated with a porous friction course (PFC) overlay, and that the operator determines are designed, constructed, and maintained in a manner acceptable to the Administrator.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(b)(3)  
*Interfaces:* 3.2.2-op; 4.2.5-op; 3.2.1-op; 1.1.1-aw; 2.1.1-aw; 4.2.3-op; 4.2.11-op; 2.1.1-op
  5. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may operate a turbine-engine-powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless where the takeoff distance includes a clearway, the clearway distance is not greater than one-half of the takeoff run, in the case of airplanes certificated after September 30, 1958, and before August 30, 1959.  
*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(b)(4)(i)  
*Interfaces:* 2.1.1-aw; 4.2.11-op; 4.2.5-op; 2.1.1-op; 3.2.1-op; 4.2.3-op; 1.1.1-aw; 3.2.2-op
  6. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating

under FAR Part 91, no person may operate a turbine–engine–powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless where the takeoff distance includes a clearway, the clearway distance is not greater than one–half of the runway length, in the case of airplanes certificated after August 29, 1959.

*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(b)(4)(ii)

*Interfaces:* 4.2.11–op; 2.1.1–op; 1.1.1–aw; 3.2.1–op; 3.2.2–op; 4.2.5–op; 4.2.3–op; 2.1.1–aw

7. Check that the Certificate Holder's manual system includes instructions and information to ensure that, when operating under FAR Part 91, no person may take off a turbine–engine–powered transport category airplane certificated after August 29, 1959, unless, in addition to the requirements of paragraph (b) of this section: 1) The accelerate–stop distance is no greater than the length of the runway plus the length of the stopway (if present). 2) The takeoff distance is no greater than the length of the runway plus the length of the clearway (if present). 3) The takeoff run is no greater than the length of the runway.

*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(c)(1); 91.605(c)(2); 91.605(c)(3)

*Interfaces:* 4.2.3–op; 3.2.1–op; 3.2.2–op; 4.2.5–op; 1.1.1–aw; 2.1.1–aw; 2.1.1–op; 4.2.11–op

8. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may take off any transport category airplane (other than a turbine–engine–powered airplane certificated after September 30, 1958) unless the takeoff weight does not exceed the authorized maximum takeoff weight for the elevation of the airport of takeoff.

*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(a)(1)

*Interfaces:* 2.1.1–aw; 4.2.11–op; 4.2.5–op; 4.2.3–op; 2.1.1–op; 1.1.1–aw; 3.2.1–op; 3.2.2–op

9. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may take off any transport category airplane (other than a turbine–engine–powered airplane certificated after September 30, 1958) unless the elevation of the airport of takeoff is within the altitude range for which maximum takeoff weights have been determined.

*Sources:* 121.135(a)(1); 121.135(b)(9); 91.605(a)(2)

*Interfaces:* 4.2.11–op; 2.1.1–op; 3.2.1–op; 3.2.2–op; 1.1.1–aw; 4.2.3–op; 2.1.1–aw; 4.2.5–op

10. Check that the Certificate Holder's manual system includes instructions and information to its personnel that, when operating under FAR Part 91, no person may take off any transport category airplane (other than a turbine–engine–powered airplane certificated after September 30, 1958) unless normal consumption of fuel and oil in flight to the airport of intended landing will leave a weight on

<p>arrival not in excess of the authorized maximum landing weight for the elevation of that airport.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(9); 91.605(a)(3)  <i>Interfaces:</i> 4.2.3–op; 4.2.5–op; 3.2.1–op; 3.2.2–op; 1.1.1–aw; 2.1.1–aw; 2.1.1–op; 4.2.11–op</p>	
<p>1.13 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the related requirements of 14 CFR Section 121.135?  Related CFRs: 121.135(a)(2); 121.135(a)(3); 121.135(a)(4); 121.135(b)(9); 121.135(b)(13)  <i>Related Design JTI's:</i></p> <ol style="list-style-type: none"> <li>1. Check that the Certificate Holder's manual system includes procedures to ensure that if it is operating under the interim Airplane Performance Operating Limitations of appendix K, that until December 20, 2010, airplanes described in paragraph 1.a of that appendix may continue to comply with the requirements in Subpart I of Part 135 and Sec. 135.181(a)(2) of this chapter that apply to small, nontransport category airplanes.  <i>Sources:</i> 121.135(b)(13)  <i>Interfaces:</i> 4.2.11–op; 2.1.1–op; 3.2.1–op; 3.2.2–op; 1.1.1–aw; 2.1.1–aw; 4.2.3–op; 4.2.5–op</li> <li>2. Check that the Certificate Holder's manual system includes instructions and information to its personnel that if it is operating under the interim Airplane Performance Operating Limitations of appendix K, that until December 20, 2010, airplanes described in paragraph 1.a of that appendix may continue to comply with the requirements in Subpart I of Part 135 and Sec. 135.181(a)(2) of this chapter that apply to small, nontransport category airplanes.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 3.2.2–op; 3.2.1–op; 4.2.5–op; 1.1.1–aw; 2.1.1–aw; 4.2.3–op; 4.2.11–op; 2.1.1–op</li> <li>3. Check that the Certificate Holder's manual required by FAR 121.133 contains instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety and is in a form that is easy to revise.  <i>Sources:</i> 121.135(a)(1); 121.135(a)(2)  <i>Interfaces:</i> 2.1.5–aw; 2.1.1–op; 2.1.2–op; 2.1.3–aw; 2.1.4–aw; 2.1.1–aw; 2.1.2–aw; 2.1.5–op; 2.1.4–op; 2.1.3–op</li> <li>4. Check that the Certificate Holder's manual required by FAR 121.133 contains instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety and has the date of last revision on each page concerned.  <i>Sources:</i> 121.135(a)(1); 121.135(a)(3)  <i>Interfaces:</i> 2.1.3–op; 2.1.5–aw; 2.1.4–aw; 2.1.2–aw; 2.1.1–aw; 2.1.3–aw; 2.1.5–op; 2.1.4–op; 2.1.1–op; 2.1.2–op</li> <li>5. Check that the Certificate Holder's manual required by FAR 121.133 contains instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with</li> </ol>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>

<p>a high degree of safety and is not contrary to any applicable Federal regulation and, in the case of a flag or supplemental operation, any applicable foreign regulation, or the Certificate Holder's operations specifications or operating certificate.  <i>Sources:</i> 121.135(a)(1); 121.135(a)(4)  <i>Interfaces:</i> 2.1.2-aw; 2.1.1-aw; 2.1.4-op; 2.1.5-op; 2.1.3-op; 2.1.3-aw; 2.1.4-aw; 2.1.5-aw; 2.1.2-op; 2.1.1-op</p> <p>6. Check that the Certificate Holder's manual system contains instructions and information to its personnel to include takeoff weight limitations.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 2.1.4-aw; 2.1.5-aw; 2.1.3-aw; 2.1.1-op; 2.1.4-op; 2.1.5-op; 2.1.2-op; 2.1.3-op; 2.1.1-aw; 2.1.2-aw</p> <p>7. Check that the Certificate Holder's manual system contains instructions and information to its personnel to include en route weight limitations.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 2.1.1-op; 2.1.2-op; 2.1.4-aw; 2.1.1-aw; 2.1.3-aw; 2.1.5-aw; 2.1.4-op; 2.1.2-aw; 2.1.5-op; 2.1.3-op</p> <p>8. Check that the Certificate Holder's manual system contains instructions and information to its personnel to include landing weight limitations.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(9)  <i>Interfaces:</i> 2.1.3-op; 2.1.4-op; 2.1.1-aw; 2.1.5-op; 2.1.2-aw; 2.1.3-aw; 2.1.1-op; 2.1.2-op; 2.1.5-aw; 2.1.4-aw</p> <p>9. Check that the Certificate Holder's manual system contains information that is appropriate for each group of personnel, to include procedures for determining the usability of landing and takeoff areas, and for disseminating pertinent information thereon to operations personnel.  <i>Sources:</i> 121.135(a)(1); 121.135(b)(13)  <i>Interfaces:</i> 2.1.2-aw; 2.1.1-aw; 2.1.5-op; 2.1.3-op; 2.1.2-op; 2.1.1-op; 2.1.4-op; 2.1.5-aw; 2.1.3-aw; 2.1.4-aw</p>	
<p>1.14 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the guidance contained in FAA Order 8400.10?</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual contains a policy to include limitations in their AFM or RFM that are published advisory information.  <i>Sources:</i> FAA Order 8400.10, Volume 4, Chapter 3, Section 1, Paragraph 903C  <i>Interfaces:</i> 4.2.5-op; 3.2.1-op; 1.1.1-aw; 4.2.3-op; 2.1.2-aw; 4.2.11-op; 2.1.2-op</p> <p>2. Check that the Certificate Holder's manual system includes procedures to provide direction and guidance to be used by flightcrews and dispatchers when operating en route with the landing gear extended, whether planned or unplanned. The procedures must include speed limitations</p>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>

<p>and fuel consumption data sufficient to show compliance with regulatory requirements.  <i>Sources:</i> FAA Order 8400.10, Volume 4, Chapter 3, Section 5, Paragraph 1019 A  <i>Interfaces:</i> 1.2.1–aw; 2.1.2–aw; 1.3.5–aw; 2.1.1–aw; 1.1.3–aw; 4.2.11–op; 3.2.3–op; 4.2.8–op; 1.1.2–op; 4.2.5–op; 1.3.9–aw; 1.2.4–aw; 4.2.3–op; 2.1.1–op; 1.1.2–aw; 2.1.2–op; 1.1.1–aw; 1.3.1–aw; 4.2.8–aw; 1.3.2–aw; 1.2.5–aw; 4.2.1–aw</p> <p>3. Check that the Certificate Holder's manual contains specific instructions and information to flightcrews for operating each type of aircraft in adverse weather conditions or prohibit such operations.  <i>Sources:</i> FAA Order 8400.10, Volume 4, Chapter 3, Section 5, Paragraph 1025  <i>Interfaces:</i> 4.2.11–op; 1.2.4–aw; 1.3.9–aw; 1.1.2–op; 1.1.3–aw; 1.3.5–aw; 1.2.5–aw; 2.1.2–op; 2.1.1–op; 1.1.1–aw; 1.1.2–aw; 4.2.8–aw; 1.3.2–aw; 1.3.1–aw; 1.2.1–aw; 3.2.3–op; 4.2.5–op; 4.2.1–aw; 2.1.2–aw; 4.2.3–op; 2.1.1–aw; 4.2.8–op</p>	
<p>1.15 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the guidance contained in FAA Flight Standards Handbook Bulletin FSAT 95–16A?</p> <p><i>Related Design JTI's:</i></p> <p>1. If the Certificate Holder chooses to conduct one-engine inoperative ferry flights, check that the Certificate Holder's manual system includes procedures to ensure that flight manuals do not differ substantially from the manufacturers' aircraft flight manual operational parameters, limitations, or flight techniques referencing engine-out operations. The manuals should be reviewed, compared, and amended as needed to correct any ambiguities and contradictory or confusing statements. Required or recommended speeds, power settings, or other parameters should be stated in specific terms.  <i>Sources:</i> FSAT 95–16A  <i>Interfaces:</i> 2.1.2–op; 4.2.3–op; 4.2.5–op; 4.2.8–aw; 1.3.2–aw; 1.3.17–aw; 1.3.1–aw; 3.2.1–op; 1.1.2–aw; 3.2.2–op; 1.1.1–aw; 4.2.1–aw; 1.2.3–aw; 1.2.1–aw; 1.1.3–aw; 2.1.2–aw; 1.3.5–aw; 4.2.8–op; 3.2.3–op; 1.1.2–op; 3.1.13–op; 4.2.11–op</p>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>
<p>1.16 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the guidance contained in FAA Flight Standards Handbook Bulletin FSAT 95–17?</p> <p><i>Related Design JTI's:</i></p> <p>1. Check that the Certificate Holder's manual system includes procedures that meet the requirements of FSAT 95–17 paragraphs 2A through 2f when operating with a 10 minute engine-out takeoff trust time limit in their operation</p>	<p><input type="checkbox"/> Yes  <input type="checkbox"/> No, Explain</p>



<p>specifications.  <i>Sources:</i> FSAT 95–17 3 (B)  <i>Interfaces:</i> 1.3.17–aw; 4.2.3–op; 4.2.5–op; 3.2.2–op;  3.2.1–op; 4.2.11–op; 5.1.1–aw</p>	
<p>1.17 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the guidance contained in FAA Flight Standards Handbook Bulletin HBAAT 98–31?</p> <p><i>Related Design JTI's:</i></p> <ol style="list-style-type: none"> <li>1. Check that the Certificate Holder's manual system includes procedures to ensure that flightcrews cross-check engine parameters with provided data.  <i>Sources:</i> HBAAT 98–31 4A  <i>Interfaces:</i> 3.1.7–op; 4.2.8–aw; 1.3.20–aw; 4.2.11–op; 4.2.3–op; 4.2.5–op; 1.3.18–aw; 4.2.8–op; 4.2.1–aw; 5.1.1–aw; 5.1.5–op; 1.1.1–aw</li> </ol>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.18 Does the Certificate Holder's Aircraft Performance Operating Limitations process comply with the guidance contained in FAA Advisory Circular 91–6A?</p> <p><i>Related Design JTI's:</i></p> <ol style="list-style-type: none"> <li>1. Check that the Certificate Holder's manual system includes instructions to ensure that flightcrews on each type of turbo jet aircraft are applying a gross weight reduction, V1 speed adjustments, and/or additional runway length required when operating on wet, slush, or snow covered runways.  <i>Sources:</i> AC–91–6A  <i>Interfaces:</i> 5.1.1–aw; 3.2.1–op; 3.2.2–op; 4.2.11–op; 1.3.17–aw; 4.2.5–op; 4.2.3–op</li> </ol>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
<p>1.19 If alternate procedures exist for use during irregular conditions, do the alternate procedures provide an equivalent level of safety to achieve the same results as the primary procedures?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

<b>SAI SECTION 1 – PROCEDURES ATTRIBUTE –Drop Down Menu</b>	
1. No procedures, policy, instructions or information specified.	
2. Procedures or instructions and information do not identify (who, what, when, where, how).	
3. Procedures, policy or instructions and information do not comply with CFR.	
4. Procedures, policy or instructions and information do not comply with FAA policy and guidance.	
5. Procedures, policy or instructions and information do not comply with other documentation (e.g., manufacturer's data, Jeppesen's Charts, etc.).	
6. Procedures, policy or instructions and information unclear or incomplete.	
7. Documentation quality (e.g., unreadable or illegible).	
8. Procedures, policy or instructions and information inconsistent across Certificate Holder manuals (FOM – Flight Operations Manual to GMM – General Maintenance Manual, etc.).	
9. Procedures, policy or instructions and information inconsistent across media (e.g., paper, microfiche, electronic).	
10. Resource requirements incomplete (personnel, facilities, equipment, technical data).	
11. Other.	

**SAI SECTION 2 – CONTROLS ATTRIBUTE**

**Objective:** Controls are checks and restraints designed into a process to ensure a desired result. The questions in this section of the data collection tool are designed to assist the inspector in determining if checks and restraints are designed into the process to ensure the desired result is achieved. Controls should be written into the manual system to ensure that the most important manual policies, procedures or instructions and information will be complied with.

Controls may be in the form of "administrative controls" which are secondary or supplemental written procedures. Like written procedures, administrative controls also need to provide answers to the associated who, what, when, where and how type questions. Controls may also be in the form of "engineered controls" such as automated features or mechanical actions or devices (i.e., safety devices, warning devices, etc.).

**Tasks**

To meet this objective, the inspector must accomplish the following tasks:

1. Review the control questions below.
2. Review the Certificate Holder's policies, procedures, instructions and information to gain an understanding of the controls that it has documented.

**Questions**

To meet this objective, the inspector must answer the following questions:

2 Are the following controls built into the Aircraft Performance Operating Limitations process:	
2.1 Is there a control in place to ensure that the Certificate Holder's aircraft are operated in compliance with operating limitations?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.2 If the Certificate Holder's aircraft are operating in the state of Alaska and utilizing 14 CFR Section 91.323, is there a control in place to ensure that the operation is in full compliance with the regulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.3 If operating any transport category airplane (other than a turbine-engine-powered airplane certificated after September 30, 1958) under 14 CFR Part 91, is there a control in place to ensure that operations are conducted within the limitations of 14 CFR 91.605(a)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.4 If operating any turbine-engine-powered transport category airplane certificated after September 30, 1958, under 14 CFR Part 91, is there a control in place to ensure that operations are conducted within the limitations of 14 CFR 91.605(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.5 If operating any turbine-engine-powered transport category airplane certificated after August 29, 1959, under 14 CFR Part 91, is there a control in place to ensure that operations are conducted within the limitations of 14 CFR 91.605(c)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.6 Is there a control in place to ensure that operations are conducted with the takeoff weight at or below the authorized maximum takeoff weight for the elevation of the airport and for the ambient temperature existing at the time of takeoff?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.7 Is there a control in place to ensure that takeoff operations are conducted within the altitude range for which maximum takeoff weights have been determined for the airport elevation?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.8 Is there a control in place to ensure that the Certificate Holder operates in compliance only with the appropriate operations specifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

2.9 Is there a control in place to ensure that the Certificate Holder operates only into or out of airports that meet the requirements of 14 CFR 121.97(a) or 14 CFR 121.117(a)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.10 Is there a control in place to ensure that the Certificate Holder has an approved system for obtaining, maintaining, and distributing current aeronautical data for each airport to appropriate personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.11 Is there a control in place to ensure that, except for nontransport category airplanes certificated before January 1, 1965, the Certificate Holder has and utilizes a current approved Airplane Flight Manual for each type of airplane that it operates?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.12 Is there a control in place to ensure that the Certificate Holder carries the manual required by 14 CFR 121.141(b) on board the aircraft?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.13 Is there a control in place to ensure that the Certificate Holder has instructions and information to ensure that any company performance data derived from the Airplane Flight Manual includes correction for pressure and density altitude?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.14 The following applies to Certificate Holders that operate reciprocating engine powered transport category airplanes:	
2.14.1 Is there a control in place to ensure that the takeoff weight does not exceed the authorized maximum takeoff weight for the runway being used after taking into account the temperature operating correction factors in the applicable Airplane Flight Manual?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.2 Is there a control in place to ensure that there is adequate performance and clearance from high ground and obstructions when operating a reciprocating engine powered transport category airplane?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.3 Is there a control in place to ensure that the Certificate Holder takes off a reciprocating engine powered transport category airplane only when the airport elevation does not exceed the altitude range for which maximum takeoff weights have been determined?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.4 Is there a control in place to ensure that the Certificate Holder lands a reciprocating engine powered transport category airplane only when the airport elevation did not exceed the altitude range for which maximum landing weights have been determined?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.5 Is there a control in place to ensure that the Certificate Holder takes off a reciprocating engine powered transport category airplane only when the weight was at or below the authorized maximum takeoff weight for the elevation of the airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.6 Is there a control in place to ensure that the Certificate Holder operating a reciprocating engine powered transport category airplane conducts a landing when the landing weight is at or below the authorized maximum landing weight for the elevation of the destination airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.7 Is there a control in place to ensure that the Certificate Holder conducting the takeoff of a reciprocating engine powered transport category airplane is able to stop the airplane safely on the runway, as shown by the accelerate-stop distance data, at any time until reaching critical engine-failure speed?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

2.14.8 Is there a control in place to ensure that if the critical engine failed at any time after a reciprocating engine powered transport category airplane reached critical engine–failure speed V <sub>1</sub> , the operator was able to continue takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.9 Is there a control in place to ensure that a reciprocating engine powered transport category airplane is operated only when it is possible to clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and thereafter without banking more than 15 degrees?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.10 Is there a control in place to ensure that the Certificate Holder takes off a reciprocating engine powered transport category airplane taking into account corrections for the effective runway gradient?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.11 Is there a control in place to ensure that the Certificate Holder's procedures for takeoff of a reciprocating engine powered transport category airplane take into account not more than 50 percent of any reported headwind component or not less than 150 percent of any reported tailwind component?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.12 Is there a control in place to ensure that the Certificate Holder takes off a reciprocating engine powered transport category airplane at a weight, allowing for normal consumption of fuel and oil, that allows a rate of climb (in feet per minute), with all engines operating, of at least 6.90 VSO (that is, the number of feet per minute is obtained by multiplying the number of knots by 6.90) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.13 Is there a control in place to ensure that the Certificate Holder takes off a reciprocating engine powered transport category airplane at a weight, allowing for normal consumption of fuel and oil, that allows a rate of climb (in feet per minute), with one engine inoperative, of at least $(0.079 - 0.106/N) VSO_2$ (where N is the number of engines installed and VSO is expressed in knots) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track? For the purposes of this paragraph, the rate of climb for transport category airplanes certificated under Part 4a of the Civil Air Regulations is 0.026 VSO <sub>2</sub> .	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.14 Is there a control in place to ensure that when operating in place of the requirements of 14 CFR 121.181(a), the Certificate Holder takes off at a weight that allows the airplane to continue after an engine failure and to proceed to an alternate airport where a landing can be made in accordance with 14 CFR Section 121.187, allowing for normal consumption of fuel and oil, when the flight path can clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

2.14.15 Is there a control in place to ensure that when the Certificate Holder takes off in accordance with the requirements of 14 CFR 121.181(b), the rate of climb (as prescribed in the Airplane Flight Manual for the appropriate weight and altitude) used in calculating the airplane's flight path meets the requirements of 14 CFR 121.181(c)(1)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.16 Is there a control in place to ensure that when the Certificate Holder takes off in accordance with the requirements of 14 CFR 121.181(b), the flight will be able to meet the requirements of 14 CFR 121.181(c)(2) in the event the critical engine becomes inoperative at any point along the route?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.17 Is there a control in place to ensure that the Certificate Holder takes off when operating in accordance with the requirements of 14 CFR 121.181(b), if the airplane meets the provisions of 14 CFR 121.181(a) at 1,000 feet above the airport used as an alternate in this procedure?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.18 Is there a control in place to ensure that when operating in accordance with the requirements of 14 CFR 121.181(b), the Certificate Holder's procedure accounts for winds and temperatures that would otherwise adversely affect the flight path?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.19 Is there a control in place to ensure that the Certificate Holder is operating in accordance with the requirements of 14 CFR 121.181(b) if fuel jettisoning is allowed, that the crew is adequately trained in fuel jettisoning procedures, and that all other precautions are taken to ensure safe procedure?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.20 Is there a control in place to ensure that the Certificate Holder only takes off a reciprocating engine powered airplane that does not meet the requirements of 14 CFR 121.185(a)(2) if an alternate airport does meet all of the requirements of 14 CFR 121.185(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.21 Is there a control in place to ensure that if the Certificate Holder operates four or more reciprocating engine airplanes, its procedures provide for not operating more than 90 minutes from a suitable airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.22 Is there a control in place to ensure that the Certificate Holder requires that for alternate airports, the aircraft can be fully stopped within 70 percent of effective runway length?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14.23 Is there a control in place to ensure that if the Certificate Holder operates certain reciprocating engine powered airplanes in cargo service under 14 CFR Section 121.198, it meets those requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15 The following applies to Certificate Holders that operate turbine engine powered airplanes:	
2.15.1 Is there a control in place to ensure that the Certificate Holder takes off a turbine powered transport category airplane only when the takeoff run does not exceed the length of the runway?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.2 Is there a control in place to ensure that the Certificate Holder takes off a turbine engine powered transport category airplane at a weight that, allowing for normal consumption of fuel and oil,	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable



will allow compliance with the flight path requirements of 14 CFR 121.191(a)(1) or (2)?	
2.15.3Is there a control in place to ensure that the Certificate Holder operates a turbine engine powered transport category airplane certificated after August 26, 1957, but before October 1, 1958 (SR 422) no further than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.4Is there a control in place to ensure that the Certificate Holder operates a turbine engine powered transport category airplane certificated after September 30, 1958, but before August 30, 1959 (SR 422A) no further than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.5Is there a control in place to ensure that the Certificate Holder operates a turbine engine powered transport category airplane certificated after August 26, 1957, but before October 1, 1958 (SR 422B) no further than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.6Is there a control in place to ensure that the Certificate Holder operates a turbine engine powered transport category airplane when the landing weight, at either the airport of intended landing or the alternate airport, is at or below the authorized maximum landing weight for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.7Is there a control in place to ensure that the Certificate Holder takes off a turbine engine powered transport category airplane, except as provided in 14 CFR 121.195(c), (d), or (e), at a weight upon arrival that would allow a full stop landing at the intended destination within 60 percent of the effective length of each runway from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway in accordance with the assumptions in 14 CFR 121.195(b)(1)	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.8Is there a control in place to ensure that the Certificate Holder dispatches and subsequently lands at an airport when conditional statements such as "occasional, intermittently, briefly," or a chance of" in the weather forecast indicated that the runway might be wet at the estimated time of arrival without applying the 115 percent runway length requirement of 14 CFR 121.195(d)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.9Is there a control in place to ensure that the Certificate Holder dispatches and subsequently lands a turbojet powered airplane where the airplane can be brought to a full stop landing within 60 percent of the effective length of the runway, based on the assumptions in 14 CFR 121.195(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.10Is there a control in place to ensure that turbine engine airplane takeoff performance and obstacle clearance meet requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15.11Is there a control in place to ensure that the Certificate Holder dispatches or lands a turbojet powered aircraft on wet or slippery destination runways only when the effective length is at least 115	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

percent of required runway length per 14 CFR 121.195(b)?	<input type="checkbox"/> Not Applicable
2.15.12Is there a control in place to ensure that turbine engine airplane en route limitations are complied with?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.16Is there a control in place to ensure that the Certificate Holder takes off a turbopropeller powered airplane not meeting the runway requirements of 14 CFR 121.195(b)(2) only if an alternate airport meets all of the runway requirements of 14 CFR 121.195(c)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.17Is there a control in place to ensure that the Certificate Holder dispatches and subsequently lands a turbopropeller powered airplane at an alternate airport where the airplane can be brought to a full stop landing within 70 percent of the effective length of the runway, based on the assumptions in 14 CFR 121.195(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.18Is there a control in place to ensure that the Certificate Holder provides guidance for correlating the relationship between mu values and the subjective pilot braking descriptors of "good," "fair," "poor," and "nil"?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.19Is there a control in place to ensure that if the Certificate Holder operates a nontransport category airplane, it takes off at a weight at or below the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway in accordance with the assumptions of 14 CFR 121.199(a) and (b)(1) through (6)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.20Is there a control in place to ensure the Certificate Holder takes off and subsequently lands a nontransport category airplane at a weight that, allowing for anticipated consumption of fuel and oil, is less than or equal to the weight that would allow a full-stop landing within 60 percent of the effective length of the most suitable runway at the destination airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.21Is there a control in place to ensure that the Certificate Holder takes off and subsequently lands a nontransport category airplane at a weight that is less than or equal to the weight allowable if the landing is to be made on the runway with the greatest effective length in still air and required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.22Is there a control in place to ensure that the Certificate Holder dispatches and subsequently lands a nontransport category airplane at an alternate airport where the airplane can be brought to a full-stop landing within 70 percent of the effective length of the runway, based on the assumptions in 14 CFR Section 121.203?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.23Is there a control in place to ensure that the Certificate Holder of a nontransport category airplane ensures en route performance requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.24Is there a control in place to ensure that the Certificate Holder provides direction and guidance for flight crews and dispatchers to use when operating en route with the landing gear extended, whether planned or unplanned?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain



2.25 Is there a control in place to ensure that if the Certificate Holder permits operating a one-engine inoperative ferry flight, the manual system complies with the manufacturer's Airplane Flight Manual operational parameters, limitations, or flight techniques referencing engine-out operations?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.26 Is there a control in place to ensure that the Certificate Holder's procedures require cross-checking engine parameters with provided data?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.27 Is there a control in place to ensure that flight crews receive mu value in real time?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.28 Is there a control in place to ensure that the dispatch/flight release documents contain the Certificate Holder's required en route procedure considerations, such as drift down, ETOPS, alternate airports, and altitude information?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.29 Is there a control in place to ensure that the Certificate Holder provides specific instructions and information regarding operations in adverse weather?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.30 Does the Certificate Holder have a documented method for assessing the impact of any changes made to the controls in the Aircraft Performance Operating Limitations process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

<b>SAI SECTION 2 – CONTROLS ATTRIBUTE –Drop Down Menu</b>
1. No controls specified.
2. Documentation for the controls do not identify (who, what, when, where, how).
3. Controls incomplete.
4. Controls could be circumvented.
5. Controls could be unenforceable.
6. Resource requirements incomplete (personnel, facilities, equipment, technical data).
7. Other.

**SAI SECTION 3 – PROCESS MEASUREMENT ATTRIBUTE**

**Objective:** Process measurements are used by the Certificate Holder to measure and assess its processes to identify and correct problems or potential problems and to make improvements to the processes. The questions in this section of the data collection tool are designed to assist the inspector in determining if the Certificate Holder measures or assesses information to identify, analyze and document potential problems with the process. Process measurements are basically a Certificate Holder's internal evaluation or auditing of the most important policies, procedures or instructions and information associated with an element.

To prevent the duplication of work that would otherwise occur, Process Measurements are most commonly addressed through a combination of auditing features contained in both the Certificate Holder's Safety Program/Internal Evaluation Program (for Operations and Cabin Safety related issues) and the auditing function of the Continuous Analysis & Surveillance System (for Airworthiness or Maintenance/Inspection related issues). The Director of Safety and the Quality Assurance Department often work in conjunction to accomplish this function for the Certificate Holder. This approach simply requires amendment of the Safety Program/Internal Evaluation Program audit forms or checklists and the Continuous Analysis & Surveillance System audit forms or checklists to include the specific process measurements for each element.

**Tasks**

To meet this objective, the inspector must accomplish the following tasks:

1. Review the process measurement questions below.
2. Review the Certificate Holder's policies, procedures, instructions and information to gain an understanding of the process measurements that it has documented.

**Questions**

To meet this objective, the inspector must answer the following questions:

- 3 Does the Certificate Holder's Aircraft Performance Operating Limitations process include the following process measurements:
 

3.1 Process measurements that would reveal when the Certificate Holder failed to ensure that its aircraft were operated in compliance with operating limitations?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.2 If the Certificate Holder's aircraft was operating in the state of Alaska and utilizing 14 CFR 91.323, process measurements that would reveal when the operation was not in full compliance with the regulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.3 If operating any transport category airplane (other than a turbine-engine-powered airplane certificated after September 30, 1958) under 14 CFR Part 91, process measurements that would reveal when operations were not conducted within the limitations of 14 CFR 91.605(a)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.4 If operating any turbine-engine-powered transport category airplane certificated after September 30, 1958, under 14 CFR Part 91, process measurements that would reveal when operations were not conducted within the limitations of 14 CFR 91.605(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.5 If operating any turbine-engine-powered transport category airplane certificated after August 29, 1959, under 14 CFR Part 91, process measurements that would reveal when operations were not conducted within the limitations of 14 CFR 91.605(c)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

3.6 Process measurements that would reveal when operations were not conducted with the takeoff weight at or below the authorized maximum takeoff weight for the elevation of the airport and for the ambient temperature existing at the time of takeoff?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.7 Process measurements that would reveal when takeoff operations were not conducted within the altitude range for which maximum takeoff weights have been determined for the airport elevation?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.8 Process measurements that would reveal when the Certificate Holder failed to operate in compliance with the appropriate operations specifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.9 Process measurements that would reveal when the Certificate Holder failed to operate only into or out of airports that meet the requirements of 14 CFR 121.97(a) or 14 CFR 121.117(a)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.10 Process measurements that would reveal when the Certificate Holder failed to have an approved system for obtaining, maintaining, and distributing current aeronautical data for each airport to appropriate personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.11 Except for nontransport category airplanes certificated before January 1, 1965, process measurements that would reveal when the Certificate Holder failed to have and utilize a current, approved Airplane Flight Manual for each type of airplane that it operates?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.12 Process measurements that would reveal when the Certificate Holder failed to carry the manual required by 14 CFR 121.141(b) on board the aircraft?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.13 Process measurements that would reveal when the Certificate Holder failed to have instructions and information to ensure that any company performance data derived from the Airplane Flight Manual included correction for pressure and density altitude?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.14 The following applies to Certificate Holders that operate reciprocating engine powered transport category airplanes:	
3.14.1 Process measurements that would reveal when the Certificate Holder failed to ensure that the takeoff weight does not exceed the authorized maximum takeoff weight for the runway being used after taking into account the temperature operating correction factors in the applicable Airplane Flight Manual?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.2 Process measurements that would reveal when the Certificate Holder failed to ensure that there was adequate performance and clearance from high ground and obstructions when operating a reciprocating engine powered transport category airplane?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.3 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered transport category airplane when the airport elevation exceeded the altitude range for which maximum takeoff weights have been determined?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.4 Process measurements that would reveal when the Certificate Holder landed a reciprocating engine powered transport category airplane when the airport elevation exceeded the altitude range for which maximum landing weights have been	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

determined?	
3.14.5 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered transport category airplane when the weight exceeded the authorized maximum takeoff weight for the elevation of the airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.6 Process measurements that would reveal when the Certificate Holder operating a reciprocating engine powered transport category airplane conducted a landing when the landing weight exceeded the authorized maximum landing weight for the elevation for the destination airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.7 Process measurements that would reveal when the takeoff of a reciprocating engine powered transport category airplane was conducted that was not able to stop the airplane safely on the runway, as shown by the accelerate stop distance data, at any time until reaching critical engine–failure speed?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.8 Process measurements that would reveal when the Certificate Holder failed to operate a reciprocating engine powered transport category airplane and ensure that it was possible, if the critical engine failed at any time after the airplane reached critical engine–failure speed $V_1$ , to continue the takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.9 Process measurements that would reveal when the Certificate Holder failed to operate a reciprocating engine powered transport category airplane when it was possible to clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and thereafter without banking more than 15 degrees?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.10 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered transport category airplane and failed to take into account corrections for the effective runway gradient?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.11 Process measurements that would reveal when the Certificate Holder's procedures for takeoff of a reciprocating engine powered transport category airplane failed to take into account not more than 50 percent of any reported headwind component or not less than 150 percent of any reported tailwind component?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.12 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered transport category airplane at a weight, allowing for normal consumption of fuel and oil, that would not allow a rate of climb (in feet per minute), with all engines operating, of at least 6.90 VSO (that is, the number of feet per minute is obtained by multiplying the number of knots by 6.90) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.13 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered transport category airplane at a weight, allowing for normal consumption of fuel and oil, that did not allow a rate of climb (in feet per minute), with one engine inoperative, of at least $(0.079 - 0.106/N) VSO_2$ (where N is the number of engines	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

installed and VSO is expressed in knots) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track? For the purposes of this paragraph, the rate of climb for transport category airplanes certificated under Part 4a of the Civil Air Regulations is 0.026 VSO2.	
3.14.14 Process measurements that would reveal when the Certificate Holder took off, when operating in place of the requirements of 14 CFR 121.181(a), at a weight that would not allow the airplane to continue after an engine failure, and proceed to an alternate airport where a landing can be made in accordance with 14 CFR 121.187, allowing for normal consumption of fuel and oil, when the flight path can clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.15 Process measurements that would reveal when the Certificate Holder took off if, when operating in accordance with the requirements of 14 CFR 121.181(b), the rate of climb (as prescribed in the Airplane Flight Manual for the appropriate weight and altitude) used in calculating the airplane's flight path did not meet the requirements of 14 CFR 121.181(c)(1)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.16 Process measurements that would reveal when the Certificate Holder took off when operating in accordance with the requirements of 14 CFR 121.181(b), if in the event the critical engine becomes inoperative at any point along the route, the flight was not able to meet the requirements of 14 CFR 121.181(c)(2)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.17 Process measurements that would reveal when the Certificate Holder took off when operating in accordance with the requirements of 14 CFR 121.181(b), if the airplane failed to meet the provisions of 14 CFR 121.181(a) at 1,000 feet above the airport used as an alternate in this procedure?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.18 Process measurements that would reveal if, when operating in accordance with the requirements of 14 CFR 121.181(b), the Certificate Holder's procedure fails to account for winds and temperatures that would otherwise adversely affect the flight path?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.19 Process measurements that would reveal when the Certificate Holder was operating in accordance with the requirements of 14 CFR 121.181(b), if fuel jettisoning was allowed, that the crew not been adequately trained in fuel jettisoning procedures or all other precautions had not been taken to ensure safe procedure?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.20 Process measurements that would reveal when the Certificate Holder took off a reciprocating engine powered airplane that did not meet the requirements of 14 CFR 121.185(a)(2) if an alternate airport did not meet all of the requirements of 14 CFR 121.185(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.21 If the Certificate Holder operates four or more reciprocating engine airplanes, process measurements that would reveal if its procedures failed to provide for not operating more than 90 minutes from a suitable airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.14.22 Process measurements that would reveal when the Certificate Holder failed to require that for alternate airports, the aircraft can be fully stopped within 70 percent of effective runway length?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable



3.14.23 If the Certificate Holder operates certain reciprocating engine powered airplanes in cargo service under 14 CFR 121.198, process measurements that would reveal if it failed to meet those requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
15 The following apply to Certificate Holders that operate turbine engine powered airplanes:	
3.15.1 Process measurements that would reveal when the Certificate Holder took off a turbine powered transport category airplane when the planned takeoff run exceeded the length of the runway?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.2 Process measurements that would reveal when the Certificate Holder took off a turbine engine powered transport category airplane at a weight that, allowing for normal consumption of fuel and oil, will not allow compliance with the flight path requirements of 14 CFR 121.191(a)(1) or (2)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.3 Process measurements that would reveal when the the Certificate Holder operated a turbine engine powered transport category airplane certificated after August 26, 1957, but before October 1, 1958 (SR 422) further than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.4 Process measurements that would reveal when the Certificate Holder operated a turbine engine powered transport category airplane certificated after September 30, 1958, but before August 30, 1959 (SR 422A) further than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.5 Process measurements that would reveal when the Certificate Holder operated a turbine engine powered transport category airplane certificated after August 26, 1957, but before October 1, 1958 (SR 422B) further than than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of 14 CFR Section 121.197?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.6 Process measurements that would reveal when the Certificate Holder operated a turbine engine powered transport category airplane when the landing weight at either the airport of intended landing or the alternate airport exceeded the authorized maximum landing weight for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.7 Process measurements that would reveal when the Certificate Holder took off a turbine engine powered transport category airplane, except as provided in 14 CFR 121.195(c), (d), or (e) at a weight upon arrival that would not allow a full-stop landing at the intended destination within 60 percent of the effective length of each runway from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway in accordance with the assumptions in 14 CFR 121.195(b)(1)	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.8 Process measurements that would reveal when the Certificate Holder dispatched and subsequently landed at an airport when conditional statements such as "occasional," "intermittently," "briefly," or "a chance of" in the weather forecast indicated that the runway might be wet at the	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

estimated time of arrival without applying the 115 percent runway length requirement of 14 CFR 121.195(d)?	
3.15.9 Process measurements that would reveal when the Certificate Holder took off and subsequently landed a turbojet powered airplane where the airplane can not be brought to a full-stop landing within 60 percent of the effective length of the runway, based on the assumptions in 14 CFR 121.195(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.10 Process measurements that would reveal when the Certificate Holder failed to ensure that turbine engine airplane takeoff performance and obstacle clearance meet requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.11 Process measurements that would reveal when the Certificate Holder dispatched or landed a turbojet powered aircraft on wet or slippery destination runways when the effective length was not at least 115 percent of required runway length per 14 CFR 121.195(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.15.12 Process measurements that would reveal when the Certificate Holder failed to ensure that turbine engine airplane en route limitations are complied with?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.16 Process measurements that would reveal when the Certificate Holder took off a turbopropeller powered airplane, not meeting the runway requirements of 14 CFR 121.195(b)(2), when an alternate airport failed to meet all of the runway requirements of 14 CFR 121.195(c)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.17 Process measurements that would reveal when the Certificate Holder failed to dispatch and subsequently land a turbopropeller powered airplane at an alternate airport where the airplane can be brought to a full-stop landing within 70 percent of the effective length of the runway, based on the assumptions in 14 CFR 121.195(b)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.18 Process measurements that would reveal when the Certificate Holder failed to provide guidance for correlating the relationship between mu values and the subjective pilot braking descriptors of "good," "fair," "poor," and "nil"?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.19 If the Certificate Holder operates a nontransport category airplane, process measurements that would reveal if it took off at a weight that exceeded the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway in accordance with the assumptions of 14 CFR 121.199(a) and (b)(1) through (6)?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.20 Process measurements that would reveal when the Certificate Holder failed to take off and subsequently land a nontransport category airplane at a weight that, allowing for anticipated consumption of fuel and oil, was less than or equal to the weight that would allow a full-stop landing within 60 percent of the effective length of the most suitable runway at the destination airport?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.21 Process measurements that would reveal when the Certificate Holder failed to take off and subsequently land a nontransport category airplane at a weight that is less than or equal to the weight allowable if the landing is to be made on the runway with the greatest effective length in still air	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable



and required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component?	
3.22 Process measurements that would reveal when the Certificate Holder failed to dispatch and subsequently land a nontransport category airplane at an alternate airport where the airplane can be brought to a full-stop landing within 70 percent of the effective length of the runway, based on the assumptions in 14 CFR 121.203?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.23 Process measurements that would reveal when the Certificate Holder of a nontransport category airplane failed to ensure en route performance requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.24 Process measurements that would reveal when the Certificate Holder failed to provide direction and guidance for flight crews and dispatchers to use when operating en route with the landing gear extended, whether planned or unplanned?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.25 If the Certificate Holder permits operating a one-engine inoperative ferry flight, process measurements that would reveal when the manual system failed to comply with the manufacturer's aircraft flight manual operational parameters, limitations, or flight techniques referencing engine-out operations?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
3.26 Process measurements that would reveal when the Certificate Holder's procedures failed to require cross-checking engine parameters with provided data?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.27 Process measurements that would reveal when the Certificate Holder's procedures failed to ensure that flight crews received mu value in real time?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.28 Process measurements that would reveal when the dispatch/flight release documents failed to contain the Certificate Holder's required en route procedure considerations, such as drift down, ETOPS, alternate airports, and altitude information?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.29 Process measurements that would reveal when the Certificate Holder failed to provide specific instructions and information regarding operations in adverse weather?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.30 Does the Certificate Holder document its process measurement methods and results?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.31 Does the organization that conducts the process measurements have direct access to the person with responsibility for the Aircraft Performance Operating Limitations process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

<b>SAI SECTION 3 – PROCESS MEASUREMENT ATTRIBUTE –Drop Down Menu</b>	
1. No process measurements specified.	
2. Documentation for the process measurements does not identify (who, what, when, where, how).	
3. Inability to identify negative findings.	
4. No provisions for implementing corrective actions.	
5. Ineffective follow-up to determine effectiveness of corrective actions.	
6. Resources requirements (personnel, facilities, equipment, technical data).	
7. Other.	

**SAI SECTION 4 – INTERFACES ATTRIBUTE**

**Objective:** Interfaces are used by the Certificate Holder to identify and manage the interactions between processes. The questions in this section of the data collection tool are designed to assist the inspector in determining whether or not interactions between the procedures, policies or instructions and information associated with other independent processes within the Certificate Holder's organization are documented. Written procedures, policies or instructions and information that are interrelated and located in different manuals within the Certificate Holder's manual system need to be consistent and complement each other. For the interfaces to be effectively managed, it is not only important to identify what the interfaces are, but it is imperative to document the specific location of the interfaces within the Certificate Holder's manual system.

**Tasks**

To meet this objective, the inspector must accomplish the following tasks:

- 1 Review the interfaces associated with the Aircraft Performance Operating Limitations process that have been identified along with the individual questions in the Procedures Section (1) of this data collection tool.
- 2 Review the Certificate Holder's policies, procedures, instructions and information to gain an understanding of the interfaces that it has documented.

**Questions**

To meet this objective, the inspector must answer the following questions:

NOTE: ALL EXPLANATIONS IN THE DROP DOWN MENU FOR "NO" ANSWERS MUST INCLUDE THE INDIVIDUAL QUESTION NUMBER FROM THE PROCEDURES SECTION (1) OF THIS DATA COLLECTION TOOL AND THE ELEMENT NUMBER(S) OF THE INTERFACE(S) THAT WERE NOT ADDRESSED.

- |   |  |
|---|--|
| 4. Does the Certificate Holder's manual:  |  |
| 4.1 Properly address the interfaces that are identified along with the individual questions in the Procedures Section (1)?                                | <input type="checkbox"/> Yes<br><input type="checkbox"/> No, Explain |
| 4.2 Document a method for assessing the impact of any changes to the associated interfaces within the Aircraft Performance Operating Limitations process? | <input type="checkbox"/> Yes<br><input type="checkbox"/> No, Explain |
| 4.3 List additional interfaces identified during the accomplishment of this SAI.  |  |

<b>SAI SECTION 4 – INTERFACES ATTRIBUTE –Drop Down Menu</b>
1. No interfaces specified.
2. The following interfaces not identified within the Certificate Holder's manual system:
3. Interfaces listed are inaccurate.
4. Specific location of interfaces not identified within the manual system.
5. Other

**SAI SECTION 5 – MANAGEMENT RESPONSIBILITY & AUTHORITY ATTRIBUTE**

**Objective:** The questions in this section of the data collection tool address the responsibility and authority of the process. They are designed to assist the inspector in determining if there is a clearly identifiable, qualified and knowledgeable person who is responsible for the process, is answerable for the quality of the process and has the authority to establish and modify the process. (The person with the authority may or may not be the person with the responsibility.)

**Tasks**

To meet this objective, the inspector must accomplish the following tasks:

- 1 Identify the person who has overall responsibility for the Aircraft Performance Operating Limitations process.
- 2 Identify the person who has overall authority for the Aircraft Performance Operating Limitations process.
- 3 Review the duties and responsibilities of the person(s), documented in the Certificate Holder's manual.
- 4 Review the appropriate organizational chart.

**Questions**

To meet this objective, the inspector must answer the following questions:

5. Are the following aspects of the Management Responsibility and Authority Attributes addressed in the Aircraft Performance Operating Limitations process:
  - 5.1 Does the Certificate Holder's manual clearly identify who is responsible for the quality of the Aircraft Performance Operating Limitations process?
 

☐ Yes  
☐ No, Explain Name/Title:
  - 5.2 Does the Certificate Holder's manual clearly identify who has authority to establish and modify the policies, procedures, instructions and information for the Aircraft Performance Operating Limitations process?
 

☐ Yes  
☐ No, Explain Name/Title:
  - 5.3 Does the Certificate Holder's manual include the duties and responsibilities of those who manage the work required by the Aircraft Performance Operating Limitations process?  
SRRs: 121.135(b)(2)
 

☐ Yes  
☐ No, Explain
  - 5.4 Does the Certificate Holder's manual include instructions and information for those who manage the work required by the Aircraft Performance Operating Limitations process?  
SRRs: 121.135(a)(1)
 

☐ Yes  
☐ No, Explain
  - 5.5 Does the Certificate Holder's manual clearly and completely document the authority for this position?
 

☐ Yes  
☐ No, Explain
  - 5.6 Does the Certificate Holder's manual clearly and completely document their qualification standards for the person having responsibility for the Aircraft Performance Operating Limitations process?
 

☐ Yes  
☐ No, Explain
  - 5.7 Does the Certificate Holder's manual clearly and completely document their qualification standards for the person having authority to establish and modify the Certificate Holder's policies, procedures, instructions and information for the Aircraft Performance Operating Limitations process?
 

☐ Yes  
☐ No, Explain

5.8 Does the Certificate Holder's manual clearly and completely document the procedures for delegation of authority for the Aircraft Performance Operating Limitations process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
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<b>SAI SECTION 5 – MANAGEMENT RESPONSIBILITY &amp; AUTHORITY ATTRIBUTE –Drop Down Menu</b>
1. Not documented.
2. Documentation unclear.
3. Documentation incomplete.
4. Other.